

CAREER DECISION-MAKING PATTERNS OF UNIVERSITY STUDENTS
AS RELATED TO CAREER MATURITY

By

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To

My parents, Seung Ryul Lee and Ryum Whan Lee

My wife, Seung Keum

and

My daughter, Chris

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CAREER DECISION-MAKING PATTERNS OF UNIVERSITY STUDENTS
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The purpose of this study was to develop descriptive generalizations about career decision-making patterns of university students as related to career maturity. More specifically this study sought to examine differences in, as well as the relationship between, career decision-making patterns and career maturity of university students on the bases of class level, sex, major, and firmness of occupational goals.

The sample consisted of 527 undergraduate students who were enrolled during the Fall Quarter, 1977, at the University of Florida. Of the 527 subjects, there were: 125 freshmen (23.7%), 99 sophomores (18.8%), 142 juniors (26.9%), and 161 seniors (30.6%); 324 males (61.5%) and 203 females (38.5%); 250 science major students (47.4%) and 277 nonscience major students (52.6%); and 352 decided students (66.8%) and 175 undecided students (33.2%).

The Career Decision-Making Inventory (CDMI) and the Adult Vocational Maturity Inventory (AVMI), Form II were used to measure career decision-making patterns and career maturity of university

students, respectively. The CDMI was developed by the researcher for this study; it consisted of 48 items organized in three main sections of "values," "people," and "action," i.e., values that students consider, people who influence students, and actions that students take, when they are in the process of career decision-making. A $4 \times 2 \times 2$ factorial analysis of variance (ANOVA) was used to determine subjects' differences in career decision-making patterns and in career maturity. When significant differences were found on the basis of class level, the Student-Newman-Keuls multiple comparison was utilized to determine where the significant differences were. Pearson Product-moment Correlation Coefficient was applied to determine the relationships between career decision-making patterns and career maturity.

There were no significant differences in career decision-making patterns of university students on the bases of class level, sex, major, and firmness of occupational goals. However, there were significant differences in the career maturity of university students on the bases of sex and firmness of occupational goals, with college females and decided students being significantly more career mature than college males and undecided students, respectively. Although the result was not significant, the level of career maturity tended to increase as the class level advanced. There were significant relationships between the value and people elements, but not with the action element, of career decision-making patterns and career maturity of university students on the bases of class level, sex, major, and firmness of occupational goals. As the level of career maturity

increased, students tended to place more importance on intrinsic values, be less influenced by other people, and take actions related to information gathering and self-assessment. On the contrary, at the lower levels of career maturity, students tended to place more emphasis on extrinsic values, be more influenced by other people, and take actions related to emotional and people-seeking behaviors.

The major conclusions of this study are, first, that university students are a relatively homogeneous group in terms of their career decision-making patterns and career maturity. At the same time, some differences exist on the bases of class level, sex, major, and firmness of occupational goals. Second, significantly different levels of career maturity exist on the bases of sex and firmness of occupational goals. Third, there is a relationship between career decision-making patterns and career maturity of university students on the bases of class level, sex, major, and firmness of occupational goals.

CHAPTER I

INTRODUCTION

Since counseling emerged from vocational counseling in 1898 when Jesse Davis began work as a counselor to help high school students with their educational and vocational problems (Shertzer & Stone, 1974), vocational counseling has remained as one of the major interests of the profession. In particular, since the 1960s the development of career guidance has become one of the most significant aspects of counseling. Even though the idea is designated by various terminologies, such as "vocational guidance," "vocational counseling," "career guidance," or "career counseling," the basic function is "counseling for career development" as one career guidance textbook is titled (Tolbert, 1974).

The first publication on career guidance, Choosing a Career by Eli Weaver, was published in 1906, followed by Frank Parson's Choosing a Vocation in 1909. In particular, Parson's approach had a tremendous influence later on Williamson's "trait-and-factor" theory of occupational choice (Williamson, 1950, 1965). Since then, several distinct theories have been developed to understand and predict vocational behaviors. Super (1953, 1969), Super and Bachrach (1957), Ginzberg (1952, 1971, 1972), Ginzberg et al. (1951), and Tiedeman and O'Hara (1963) have constructed their theories based on the

developmental processes; Bordin, Nachman, and Segal (1963) have relied upon psychoanalytic constructs and assumptions; Hoppock (1967, 1970) has emphasized motivational concepts; Holland (1966, 1973) and Roe (1956, 1957, 1972) have utilized personality constructs; Miller and Form (1951), Hollingshead (1949), and Blau (1956) have considered sociological factors to be major influences; Simon (1966) and Standley (1971) have used the approach of existential psychology; and Gelatt (1962), Gelatt and Clarke (1967), Gelatt et al. (1972), Hilton (1962a, 1962b), and Hershenson and Roth (1966) have emphasized the decision-making process (Miller, 1968; Tolbert, 1974).

All of these theories focus on decision and state with varying degrees of specificity how career decisions are made (Tolbert, 1974). Furthermore, many counseling theorists (Berdie, Layton, Swanson, & Hagenah, 1963; Dilley, 1967; Goldman, 1961; Krumboltz, 1965; Tyler, 1961; Wrenn, 1962) have identified the task of assisting counselees in learning how to make good decisions, plans and choices, and how to improve their decision-making skills as a primary function of counseling. Goldman (1961), for example, states that:

An almost universal characteristic of counseling . . . is that it deals with decisions and plans . . . Counseling is usually to give help in making decisions and plans for the future and in choosing among alternative courses of action in the world of reality. (p. 25)

Tolbert (1974) supports this position when he states the goal of career counseling and career guidance as helping students make occupational and educational plans and decisions, i.e., decision-making is the key element in career counseling and guidance.

In a recent study with college students, Graff and Maclean (1970) found that a large proportion of clients indicated that regardless of the level of counselors' training, counselors did not provide them with adequate information about vocational opportunities and requirements or about how to make educational and vocational decisions. The students wanted assistance in learning about how to make decisions.

Results of a recent survey by the APGA's Professional Preparation and Standards Commission (Survey, 1977) to find out "What are the areas of knowledge and skill most in need of renewal and updating by practitioners in counseling and guidance?" has shown that "development of decision-making skills" ranked at the top of the list of priorities, followed by "educational, vocational and life planning."

All of these sources indicate that decision-making is a major focus of career development theories, a key element in career counseling and guidance, as well as a major concern of both clients and practitioners in counseling and guidance.

Therefore, research about career decision-making of clients is important for counselors to help clients in their career decision-making. Counselors should have better knowledge and understanding of clients' decision-making processes. The significance of this study is to give counselors more adequate information about clients' career decision-making processes by exploring university students' career decision-making behaviors and patterns.

Rationale

By shifting emphasis from the trait-and-factor approach, recent theorists of vocational behavior tend to emphasize a developmental approach in which vocational behavior is viewed as an ongoing process of growth and learning. These theorists regard self concept, developmental experiences and the socio-cultural context of the individual's life as major determinants of this process (Harren, 1966).

For instance, in selecting a career, according to contemporary theories of vocational development (Ginzberg, Ginsburg, Axelrad, & Herma, 1951; Holland, 1964; Super & Bachrach, 1957), the processes engaged in by an individual interact in sequential and complex ways over a long period of time. These theories of vocational development, however, are incomplete and do not explain in a specific sense how the individual makes sequential decisions relative to vocational development (Thoresen & Mehrens, 1967).

"Although a number of conceptual systems have been advanced to account for a person's choice of occupations, probably all could be criticized for a lack of explicit treatment of the qualities and interactions of the determinants of role preference or entry" (Kaldor & Zytowski, 1969, p. 781). As Samler (1964) points out, because of the lack of knowledge of the principles of career development, the understanding of the specifics of how an individual makes choices and plans remains obscure. The basic problem with career development is the paucity of our knowledge derived from research in knowing

specifically just how the individual actually behaves in realistic vocational situations (Borow, 1964; Katz, 1963; Wrenn, 1962).

With the same idea, Harren (1966) points out the necessity of a comprehensive theory. He states:

But before the goals of understanding and prediction of vocational behavior can be adequately achieved by a comprehensive theory, the basic assumptions and hypothetical constructs of such a theory must be examined. In this case, understanding the internal processes, functions and mechanisms inferred from an individual's vocational behavior is an essential prerequisite to a study of the antecedent conditions, correlates and predictive consequences of the process. (p. 271)

Cronbach (1966) agrees with Harren by pointing out that the call for experimental research in vocational counseling to produce knowledge and understanding about career behaviors has remained generally unheeded. He further claims that this phenomenon has been caused by the tremendous environmental pressure on researchers concerned with education to focus more on demonstrating and disseminating rather than on conducting more fundamental research.

In commenting on counseling research, Goldman (1976) suggests the following major changes in the methods and concepts of research: (1) performing macroscopic rather than microscopic levels of study, (2) performing field rather than laboratory studies, (3) focusing on the total individual as the unit of study, (4) developing a contractual relationship between researcher and subjects, (5) giving due attention to applied evaluation methods, (6) viewing the researcher as the basic research instrument, and (7) anticipating the use of the research findings. Goldman (1977) also emphasized that counseling research

should be focused on field study, study of individuals, case study, systematic observation, interviews, and practice-oriented studies.

Beilin (1963) asserts that the principal concern of vocational researchers should be on cognition, i.e., on cognitive learning and cognitive development, and suggests that vocational development research should shift emphasis from the normative to a concern with psychological processes and mechanisms--particularly with cognitive processes. O'Hara (1969) suggests giving high research priority to describing the dynamics of vocational exploration and decision behavior. Tiedeman (1961) also calls for "an explicit statement of the process of decision in vocational development. The structure of decision must be specified before investigations of the theory of vocational development can enter new phases" (p. 15).

However, "the vocational decision-making process itself has not been an object of formal study. Rather, research, for the most part, has focused on outcome variables, or on individual's characteristics related to choice" (Harren, 1966, p. 271). Considerable research related to vocational behavior has been performed, but it is hard to find research dealing with the analysis of the process of vocational behavior itself.

A very significant problem facing the contemporary counselor is just what to do to promote wise career decision-making by clients (Thoresen & Mehrens, 1967). How do clients make their career decision? What factors do clients consider in career decision-making? What are the major factors that influence their career decision-making? These

questions must be answered before the counselor can assist clients in learning how to make wise career choices.

Purpose of the Study

The purpose of this study was to develop descriptive generalizations about patterns of career decision-making among university students. This study emphasized decision-making processes rather than decision-making outcomes or characteristics of the decision-maker. Therefore, this study was limited to the exploration of career decision-making behaviors by examining the following research questions:

1. What factors do university students consider in their career decision-making activities?
 - a) What values influence university students in their career decision-making?
 - b) What people influence university students in their career decision-making?
2. What kinds of career decision-making patterns emerge among university students?
 - a) How do career decision-making patterns vary between male and female university students?
 - b) How do career decision-making patterns vary according to class level, i.e., freshman, sophomore, junior, and senior?
 - c) How do career decision-making patterns vary by major fields of study?
 - d) How do career decision-making patterns vary between those who have decided about occupational goals and those who have not?
3. How are career decision-making patterns related to the career maturity of university students?

Definition of Terms Used in the Study

Career decision-making is defined as "the expression of an intention to enter a particular occupation" (Crites, 1969, p. 134).

Career decision-making behavior is defined as "any behavior that consistently and significantly relates to eventual participation in an occupation" (Miller, 1968, p. 18).

Career decision-making pattern is defined as a distinctive configuration of decision-making behaviors shown by the student in the process of career decision-making. Elements of the pattern indicate the particular values, influential people, and actions students choose as listed in the Career Decision-Making Inventory (Appendix A).

Firmness of occupational goal is defined as a definite intention to enter a particular occupation. In this study students are described as decided and undecided, depending upon the firmness of their occupational goal. Therefore, "firmness of occupational goal" and "decision regarding occupational goal" are used interchangeably.

Science major students are defined as students majoring in such subject areas as natural sciences and engineering. Nonscience major students are defined as students majoring in such subject areas as humanities, behavioral sciences, and social sciences, including business-professional majors in business, accounting, and pre-law.

Outline of the Remainder of the Study

Chapter II reviews the relevant literature of career decision-making and career maturity.

Chapter III deals with the research methodology. Null hypotheses are stated, sampling procedures, instrumentation, statistical analysis are described, and limitations of the study are discussed.

Chapter IV presents research findings.

Chapter V comprises summary of the results, discussion of the results, conclusions, implications, and suggestions for further research based on the result of the findings.

CHAPTER II

REVIEW OF THE LITERATURE

The review of the literature for this research consists of the following six major sections: (1) concepts of career decision-making, (2) career decision-making theories, (3) factors of career decision-making, (4) career decision-making patterns, (5) career maturity, and (6) career decision-making and career maturity.

Concepts of Career Decision-Making

Herr (1970) classifies decision-making concepts in three different contexts: a process, an event, or an outcome or goal. According to Herr, Tiedeman (1961) and Dilley (1965) belong to the group that regards decision-making as process because "vocational development subsumes a series of decisions" (Herr, 1970, p. 2).

When decision-making is considered an "event," it is identified as "a behavior at a point in time," (Herr, 1970, p. 2) and a vocational decision is defined as "any behavior that consistently and significantly relates to eventual participation in an occupation" (Miller, 1968, p. 18). In this view, a particular choice is regarded as a subgoal in a continuous process (Bordin, Nachman, & Segal, 1963).

When decision-making is a result or product of some guidance strategy, it can be considered an "outcome." Dilley (1967), according to Herr (1970), shares this outcome view by suggesting that good decision-making is a counseling goal. Dilley (1965, 1967) uses decision-making in terms of "outcome view" and "process view." In the outcome view, "a good decision is considered to be one whose outcomes (results) are favorable" (Dilley, 1967, p. 548).

In the process view, "a decision 'makes sense' only by looking at the individual who made it at the time he was making it. It is assumed that, during the decision-making process, a rational individual will look for and consider the range of possible outcomes that could happen if he were to take each of these alternatives" (Dilley, 1967, p. 548). However, "because of the judgment problem and the uncertainty problem," Dilley (1967) points out that "many counselors have tended to look at decisions in terms of process rather than outcomes" (p. 548).

Tolbert (1974) lists some basic concepts of decision-making as follows: alternatives, purposes, sequential decision-making, information or input, utility of goal, probability of each outcome, conditions of uncertainty, and maximizing gain.

Although the background for decision-making theories has been developed from studies of utility in economics more than two hundred years ago (Edwards, 1954), "it has long been during the past decade and a half that they have gained currency in psychology and even more recently in vocational psychology" (Crites, 1969, p. 105).

The utility concepts of Bross (1953) and Edwards (1955, 1961) on decision theories provide some bases for the recent development of theories regarding career decision-making.

In 1953 Bross distinguished a decision-making system as a predictive system and a value system into which data are fed. According to him, the past provides data for the present decision-making. The process becomes a chain of events rather than a causal chain in which outcomes are fixed and known, and so decision-making is in itself a predictive act. The process of decision requires a "predictive system" (assessing the possible alternative actions, the possible outcomes, and the probabilities), a "value system" (weighing the desirability associated with outcomes), and a "decision criterion" (to integrate and select an appropriate action).

Using gambling situations, two years later Edwards (1955) examined the following four models of decision-making: (1) EV (expected values), (2) EU (expected utility model), (3) SEM (maximization model or subjectively expected money value model), and (4) SEU (subjective expected utility model). One of the most widely accepted decision models is one that combines the idea of utility and subjective probability, i.e., Subjective Expected Utility Model (SEU). In particular, Ziller (1957) was influenced heavily by Edwards and utilized concepts derived from game theory to suggest that vocational choices could be studied in terms of their utility for risk for the individual.

The ideas of Bross (1953) and the SEU model formulated by Edwards (1961) were combined later by Thoresen and Mehrens (1967). They postulated that "Two properties of any decision situation that are generally said to influence behavior are: (1) the utility value, i.e., the desirability of the possible outcomes of a course of action, and (2) the probability of these outcomes. Utilities can also be thought of as the anticipated reward value of an outcome" (Thoresen & Mehrens, 1967, p. 167).

Career Decision-Making Theories

The decision concepts were shifted from the economic utility decision theory to psychological decision theory in recent years. As a matter of fact, during the 1960's, a number of vocational theorists speculated that vocational development could be understood better by employing concepts suggested by psychological decision theory (Jepsen & Dilley, 1974). As Miller (1974) declares, this aspect of career decision-making "became one of the most characteristic emphases in the sixties" (p. 245). This psychological decision theory seeks to "describe in an orderly way what variables influence choices" (Edwards & Tversky, 1967, p. 7).

Various career decision-making theories have emerged since then. Jepsen and Dilley (1974) list no less than eight prominent vocational decision-making models, and Tolbert (1974) deals with at least six different career decision-making theories. Through her historical

approach to decision-making in vocational development, Miller (1974) introduces five significant career decision-making theories.

Jepsen and Dilley (1974) divided eight career decision-making models into two groups, "descriptive" vocational decision-making models and "prescriptive" vocational decision-making models. Descriptive vocational decision-making models, according to Jepsen and Dilley, purport to represent the ways people generally make career decisions, i.e., the "natural" phenomena. Tiedeman and O'Hara (1963), Hilton (1962), Vroom (1964), Hsu (1970), and Fletcher (1966) are classified as fitting this model.

Prescriptive models represent attempts to help people make better decisions to minimize decision errors. Models in this group were developed by Katz (1963, 1966), Gelatt (1962), and Kaldo and Zytowski (1969).

Some of the significant career decision-making theories are reviewed herewith.

Tiedeman and O'Hara's Career Decision-Making Theory

In order to solve the problems that one meets in vocational situations, Tiedeman (1961) and Tiedeman and O'Hara (1963) developed a developmental decision-making process of differentiation and integration. According to them, the decision-making process is initiated when the decision-maker experiences a vocational problem and realizes that a decision must be made. In this process an individual may be at different stages in dealing with different problems.

Tiedeman and O'Hara (1963) divide the process into two periods--anticipation or preoccupation, and implementation and adjustment--that distinguish between behaviors prior to and following instrumental action on the decision. The anticipation period is subdivided into four stages, representing discrete changes in the condition of the decision: exploration, crystallization, choice, and clarification. The implementation and adjustment phase is subdivided to three steps: induction, reformation, and integration.

Based on Tiedeman and O'Hara's decision-making theory, Harren (1966) developed a decision-making instrument, Vocational Decision-Making Checklist (VDC), which later was revised, extended, and retitled Assessment of Career Decision-Making (1976).

Gelatt's Career Decision-Making Theory

Based on the assumption that one important purpose of counseling is to help students make "good" decisions, Gelatt (1962) suggested that a decision be evaluated by the process it follows rather than the outcome alone. He described a "proposed decision-making framework" derived from Bross' (1953) design for statistical decisions and Cronbach and Gleser's (1957) description of decision sequences.

Gelatt (1962) states two characteristics that all decisions possess: (1) there is an individual who is required to make a decision, and (2) there are two or more courses of action from which he must select one on the basis of information he has about them. The decision may be either terminal (final) or investigatory (calling for additional information) depending upon how it relates to his purposes.

Information is organized into three systems: (1) predictive system, information about alternative actions, possible outcomes, and probabilities linking actions to outcomes; (2) value system, relative preferences among outcomes; and (3) decision criteria, or rules for evaluation.

Hilton's Career Decision-Making Theory

Hilton's (1962) career decision-making theory is based on the concept of complex information-processing mechanisms. In formulating his theory, Hilton was drawn upon several people. He was influenced by Simon's work in human problem-solving (Newell, Shaw, & Simon, 1958; Simon, 1955, 1965) and borrowed the concept of "plans" from Miller, Galanter, and Pribram (1960), and the concept of "cognitive dissonance" from Festinger (1957).

The basic concepts of Hilton's theory are premises, plans, and cognitive dissonance. Premises are beliefs and expectations about self and the world. Plans denote an image of sequential actions associated with entering an occupational role. Cognitive dissonance accounts for a method of testing out plans against current premises. The decision-making process is initiated by an input from the environment that alters the decision-maker's present plans.

Utilizing these concepts, Hilton (1962) proposes that the reduction of dissonance among a person's beliefs about himself and his environment is the major motivation of career decision-making. He has described five categories of career decision-making models: (1) the attribute-matching model, (2) the need-reduction model, (3) the

probable gain model, (4) the social structure model, and (5) the complex information processing model on which Hilton's theory is based.

As Crites (1969) states, however, "Neither Gelatt nor Hilton deal directly with the decision-making process in relation to the overall course of vocational development, although a connection between the two is implied in both their models" (p. 107).

Hershenson and Roth's Career Decision-Making Theory

Hershenson and Roth (1966) have used the concept of "cognitive dissonance" in a different way than Hilton (1962). They have assumed that vocational decision-making reduces the range of subsequent vocational experiences and thus reduces the variety of career alternatives an individual has. The remaining alternatives are thereby strengthened. Eventually, through the process of narrowing alternatives and strengthening the remaining ones, the individual arrives at his career choice.

In terms of counseling practice, according to Hershenson and Roth (1966), awareness of the implications of the decision-making process is necessary for the counselor to explore exactly with the client the present status of the client in the decision-making process, the way the client arrived at his current status, and the directions the client may follow as a result of the decision-making. As suggested by Gelatt (1962), Hershenson and Roth maintain that the client's process of decision-making and implementation should be examined by the

counselor with him, to facilitate future similar activities in the vocational and in other life spheres.

Katz's Career Decision-Making Theory

Katz's (1963, 1966) career decision-making theory emphasizes a structure to be used in the practical art of helping people. Its major difference from other theories is that the starting point in the career decision-making process is the identifying and defining of values rather than the listing of alternatives.

In Katz's theory, values are regarded as the satisfying goals or desired states that are sought, but not in terms of motivating drive or specific instrumental action (Katz, 1963, 1969). The decision-maker develops his own list of dominant values and scales them according to their relative magnitude.

SIGI (System of Interactive Guidance and Information), the computer-assisted career decision-making system, was developed by Katz (1973) and is based on his career decision-making theory. SIGI consists of six subsystems: values, locate, compare, prediction, planning, and strategy.

Kaldor and Zytowski's Career Decision-Making Theory

Kaldor and Zytowski (1969) derived their career decision-making theory from the principles of economic decision-making to specify classes of determinants and to describe their interrelationships in producing a final choice.

Kaldor and Zytowski imply that the decision-making of an individual depends upon his estimates of the likelihood of various outcomes combined with consideration of the expense in time and effort, and other factors. The concept of decision-making requires alternatives among which to choose, and a criterion for the selection. In this context, the alternatives are different kinds of work or occupational opportunities.

Other Career Decision-Making Theories

Ziller (1957) discussed risk-taking tendencies in career decision-making theory. He assumed that willingness to take risks varied with the occupations selected. However, Slakter and Cramer (1969) found only a weak relationship between risk-taking and choice of an educational program or occupation.

Hsu (1970) utilizes a quantitative system to analyze the decision-making process. According to Hsu, the vocational goal is the algebraic sum of Valence-Expectancy products of all outcomes for an occupation where the Expectancy of each outcome is unity. Hsu applies systems theory in his assumption that the decision-maker is a "system," information about occupation and self serves as the environmental "input," and occupational choice is the "output."

Learning theory has also been applied to the study of career decision-making by Miller (1968). Miller suggests some values in considering a learning theory of vocational behavior and the special contributions of such a theory to an understanding of career decision-making. However, his presentation does not really suggest practical

applications of learning theory to the educational-vocational decision-making task (Crites, 1969).

From the review of some significant career decision-making theories, it is apparent that they make some basic assumptions about the decision-maker and his surroundings. Jepsen and Dilley (1974) classified them as follows: (1) assumptions about the amount of information available to decision-makers; (2) assumptions about conditions of risk or uncertainty in career decision-making processes; (3) assumptions about the decision strategy being implemented by the decision-maker; (4) assumptions about the level of precision in combining information to make a commitment; and (5) assumptions regarding the relationship between two conceptualizations about anticipated future states (outcomes).

Factors of Career Decision-Making

Numerous factors affect career decision-making. Some are subtle and difficult to identify, while others are readily identifiable. Because of the presence of both conscious and unconscious factors, it is often difficult to explain or describe how a particular decision was reached.

Career decision-making of students usually involves what students themselves want and requires the assistance of certain individuals (e.g., parents, counselors, teachers, and others) whom the decision-maker often contacts (Watley, 1966).

Slocum (1965) identifies some influential factors in career decision-making as follows: (1) personal variables such as aptitudes, interests, sex, age, physical strength, and personal history; (2) social and cultural factors that operate on an impersonal basis, including social values and other norms, job requirements, and employment opportunities; (3) interpersonal relationships perceived by the decision-maker; and (4) the relevance of the decision-maker's reference groups.

Herr (1970) regards the culture, race, social class, sex, and age of the decision-maker as general factors in vocational development and mentions some specific factors in vocational development and decision-making: (1) aptitude and intelligence; (2) values; (3) occupational prestige, occupational stereotype, interests and needs; and (4) the self-concept.

In order to assist entering freshmen who have not yet chosen a career direction or college major, Elkins (1975) deals with abilities, duties, earnings, education, energy level, experience, goals, interests, opportunity, personality qualifications, values, and working conditions as career decision-making factors.

The following section reviews some factors, including values and influential people, which relate to individual career decision-making.

Values and Career Decision-Making

Since the emphasis of career guidance shifted from the trait-and-factor approach to the career development approach, the individual's value system has become a major concern. These values have been

studied in various ways by many career development theorists (Herr, 1970). In discussing three important questions to be resolved by the individual in making a career decision, Hoyt (1972) states, "The first of these is: What is important to me? This, of course, is a question of personal work values. . . . The personal value question is the beginning point in the making of wise career decisions" (p. 86).

Values have been defined in various ways, but with similar emphasis (Herr, 1970). Williamson (1958) defines values as "ideas on which people act." According to Jacob (1957), values are "preferences, criteria or choices of personal or group conduct." Blocher (1973) defines values as "socially learned constructs through which people view events and assign meanings and significance to experiences. They encompass aesthetic, moral, ethical, and utilitarian or material dimensions" (p. 59).

Comparing values with needs, Patterson (1973) maintains that values are not needs, interests, nor goals, but are expressions of needs and criteria for the choice of goals. Katz (1969) also distinguishes between values and needs. He asserts that "if needs are regarded as basic motivating forces, values may refer to characteristic outer expressions and culturally influenced manifestations of needs" (p. 461). More specifically, according to him (Katz, 1969), values represent feelings about outcomes or results, such as the importance, purpose, or worth of an activity. Interests apply to the differentiated means by which the valued goal may be reached.

Some people have examined the relation of both life values and work values to occupational choice. The relation of life values to occupational choice has been examined by Allport (1961), Jacob (1957), and Rosenberg (1957). The relation of work values to occupational choice has been examined by Davis (1964), Miller (1956), and Schultz and Mazer (1964). Work values are defined by Zytowski (1970) as "a set of concepts which mediate between the person's affective orientation and classes of external objectives offering similar satisfactions" (p. 176).

According to a recent Williams (1972) study with graduate students, work values, as measured by the Occupational Value Indicator (OVI), were significantly related to occupational choice. Earlier, Anderson (1963) compared two groups of graduates, the classes of 1936-41 and 1950-54, to find out that both old and new graduates made their decision regarding their major based mainly on subject matter and values as preparation for their future profession. The consistency of value is found in a recent study by Kapes and Strickler (1975) who compared the longitudinal development of occupational values of 65 ninth and twelfth grade students. Those values that seemed strong in the ninth grade seemed even stronger in the twelfth grade, while weak ones in the ninth grade seemed weak by the twelfth.

After reviewing studies by Berdie (1943), Jurgensen (1947), Miller (1956), Rosenberg (1957), Astin (1958), Eyde (1959), Schwarzweller (1960), Simpson and Simpson (1960), Gray (1963), and Davis (1965) about factors important in choosing a career, Zytowski (1970) discovered that in addition to finding strong agreement on what

factors were given as important, persons planning to enter different occupations, or women who planned work or marriage, held different work values preeminent.

Many research projects studying work values and job satisfaction also show that the latter can be predicted by the degree to which the person's occupation satisfies his needs; differences were also found among persons in different types and levels of work. Herzberg, Mausner, and Snyderman (1959) assert that the relationships between values and satisfaction is curvilinear--that job related factors contribute to satisfaction, but factors related work context contribute to dissatisfaction.

Friedlander (1965) has formulated satisfiers and dissatisfiers into growth and deficiency needs, respectively. He found that they differentiate between white and blue collar workers. The studies of Centers and Bugental (1966) support his theories. Comparing with Centers' data for adults, Singer and Stefflre (1954) found that adolescents tend to value fame, money, and interesting experience more than do adults, and that adults value independence more than high school students.

Kinnane and Bannon (1964) investigated the effects of perceived parental influence on the work values of women. They found no overall differences attributable to father or mother's influence, although differences in the value orientation of the mother-influenced group did appear in families with lower socioeconomic status.

Work values have been found to have a weak, but consistent, relationship with such factors as family status, sex, and age

(Zytowski, 1970). Research results show that individual value patterns are formed by age ten and are maintained through adolescence (Peck & Havighurst, 1960); further, that values are influenced by parents, teachers, and other significant adults (Hutt & Miller, 1949).

In investigating the difference between the occupational values of high school students of 1958 and 1970, Anderson and Bosworth (1971) found high similarity in the ranking of work values. Both groups ranked interesting work first, independence last. The similarity in the ordering of the occupational values of high school students, twelve years removed in time, suggests the existence of a high degree of homogeneity and stability in regard to the values which relate to work. Similar results are found in the Kanzaki (1976) study of stability in the social status of occupations between 1925 and 1975. Over a 50-year period, differences in the social status of occupations have remained clear-cut, and the prestige order of occupations surveyed has been remarkably stable.

In a study by Elkins (1975) to assist entering freshmen who have not yet chosen a college major or career direction, students were asked both before and after participating in the workshop to identify the four major factors they would wish to consider in their personal career planning. The rank order of factors in the pre and post workshop tests also showed some stability, i.e., interests and opportunity were ranked first and second, and personality last. Results of a study by Mansfield (1974) on British undergraduate students show that intrinsic interest in the work and opportunities for self-expression were consistently rated as most important.

Although some research results show that work values are formed early and apparently do not change significantly, sex differences seem evident. For example, women were found to value occupations that involved social services (Gribbons & Lohnes, 1965; Singer & Stefflre, 1954; Wagman, 1965; Wolfe, 1969). Men placed higher value on salary and prestige (Gribbons & Lohnes, 1965; Wagman, 1965). Singer and Stefflre (1954) found that men placed higher value on power and independence, while Shappell and Hall (1971) found that men stressed work values such as risk, aspiration, esteem, and object orientation. Women appear to value the extrinsic rewards of work less than do men (Wolfe, 1969).

The social status of parents is also related to work values held by the students (Ermalinski & Ruscelli, 1971). Stefflre (1959) found that students who had fathers with white collar occupations expressed a higher value on altruism and control, in contrast to those students whose fathers were blue collar workers, who placed more value on security and money. However, Wigent's (1974) study of community college students claimed that the educational background of the parents was not a factor related to the student's career decision-making abilities.

In a study to determine the effect of social position, race, and sex on the work values of ninth grade students in a large metropolitan area, Thomas (1974) found that female students held significantly higher work values than did male students for both the creativity and altruism variables. Students with high social position placed significantly higher values on altruism than did those in low social

positions. Female students with high social position valued achievement more than did female students in low social position or male students in high social position. In addition, male students in low social position valued this work value significantly more than did those of high social position.

Values and majors were considered in Fretz's (1972) study, in which subjects were drawn from five preprofessional curricula: education, law, medicine, engineering, and business. The questionnaire presented to the subjects included 11 occupational values: Pay received, security, prestige, advancement, variety of duties, working conditions, independence, opportunity to use special talents, challenge, self-satisfaction, and fringe benefits. Five of these 11 variables were identified as significant discriminants among the five preprofessional curricula. These five variables were pay received, advancement, working conditions, fringe benefits, and prestige.

Examination of group means of the five significantly discriminating variables indicates that for three of the variables (i.e., pay, advancement, and fringe benefits), business had the lowest means of all the groups and medicine had the highest.

Premedical and education groups provided some of the most contrasting results. Although both groups gave their highest ratings to self-satisfaction, for premedical students the next most important variables were challenge, opportunity to use special talents, and independence, on all variables of which they also had the highest ratings of all groups. In contrast, for the education group, the

second most important variable was pay received, followed by security. The results of the Fretz study show that five groups of specialized preprofessional students do vary significantly on occupational values.

Schwarzweiller (1959, 1960) concluded from his research that occupational value orientations are essentially learned in the socialization process and are determined by certain socio-cultural factors. Earlier, Centers (1948), MacArthur (1955), Rosenberg (1957), and Wilson (1959) found significant differences in attitudes toward work between college students from upper and middle class homes. Jurgensen (1947) theorized that priorities for certain values were changed with ages progress.

Davis (1965) and Searl (1962) showed that, not infrequently, a person's values changed to accommodate a major that was originally incongruent with those values. Rosenberg (1957) found the same change, but the trend to change majors to be consistent with values was stronger.

Research evidence suggests that values which form at an early age and do not change significantly through adolescence, are influenced by children's parents and teachers or other significant adults, and maintain a certain degree of consistency. At the same time, different values develop according to social position, race, sex, and major. However, what is most needed, as Fretz (1972) suggests in his study, is research that will provide information regarding the development of values from adolescence through the college period and the relationship of such development to career choice.

Influential People

Psychological theories of career choice have emphasized the role of the individual in the career decision-making process. Career decisions of students usually require the assistance of others and tend to be influenced by certain individuals. The influential person is "someone who assisted, advised, encouraged, or who otherwise was perceived by the decision-maker as having been an important positive factor in making the decision" (Watley, 1966, p. 36). These influential people can be parents, relatives, friends, counselors, or teachers.

Various research results show that parents are the most influential persons. In his study, Kerr (1962) asked high school seniors to identify those individuals from whom they felt they received the most valuable assistance in the decision to attend college. Results showed that although counselors ranked second, parents were felt to provide more valuable assistance than all the other sources combined. The percentages were as follows: parents, 67.3%; counselors, 8.2%; teachers, 6.1%; relatives, 6.0%; friends, 4.7%; self, 4.1%; and college representatives, 3.6%. However, Mansfield (1974) found that undergraduates in Britain felt the most common sources of advice and information about career choice were the university appointments board or its equivalent, parents, friends, and university lecturers.

Some researchers have revealed some relationship between identification with parents and the development of vocational interests of late adolescents. The most consistent finding is that

the son's identification with his father is a critical antecedent of the development of career interest. This conclusion has been inferred from studies showing positive correlation between the tested interests of fathers and their sons (Strong, 1957), and between the father's occupation and the career choice of the son (Werts, 1968).

Direct support for the importance of a father identification has been reported in investigations of parental identification and the patterned interests of men (Crites, 1962; Henderson, 1953; Metzger, 1958). According to Crites' (1962) study, the degree of identification with the father has also been found to relate to area of interest in male college students, but the degree of identification with mothers is not so related. Somewhat at variance with Crites' results, however, Steimel and Suziedelis (1963) found that dominance by either parent within the home was related to different areas of interest in male college students. Father identification and similarity of interests between high school male students and their fathers are also associated (Henderson, 1953). Similarity of interest patterns of high school male students and their father also correlates positively with perceived paternal job satisfaction (Metzger, 1958).

Heilbrun (1969) also demonstrated that parental identification was associated with the strength of interest patterning for college men and women in a complex fashion. Strength of patterning was influenced by the masculinity-femininity of parental model as well as by the type of identification. According to Hollender's (1972) more recent study, maternal influences are greater in the high school years and paternal influences in the college years.

Krippner (1963), using junior high school subjects, found that the student's occupational preferences, regardless of sex, were significantly related to the father's occupation. However, results of a study by Mowseian, Heath, and Rothney (1966) were inconsistent with those of other studies; Mowseian found that although 71% of all the fathers in the study were in occupational levels other than professional, 71% of the students aspired to jobs at professional levels. Mansfield (1974) also found that among British undergraduate students, no strong bias in career choices existed that was related to class background as indicated by the occupation of the father. However, a strong relationship was found between the subject studied at the university and the career chosen.

Grandy and Stahmann (1974) utilized family influence on college students' vocational choice in predicting Holland's personality type. The results showed that family variables were most successful in predicting personality types for social and enterprising groups. Using family variables was least successful in predicting investigative types.

Watley (1966) compared three different groups of students in a college engineering program: "no one"--those influenced by no one; "CT"--those influenced by a counselor or teachers, or both; and "other"--parents, relatives, or anyone else given credit by the decision-maker as an influencer. Based on the students' measured scholastic ability, physical science interests, and scholastic achievement in a school of engineering, the results showed that CT group mean on these tests was significantly higher than the means for

either of the other two groups at beyond the 0.01 level. However, data also revealed that students influenced by counselors or teachers, or both, were no more likely to complete their engineering programs successfully than students not so influenced.

Many research results indicate that parents are the most influential source for the development of students' interests and career decision-making. Since parents are the closest figure for students, this consequence is to be expected. However, as one research result (Kerr, 1962) shows, counselors do rank second right after the parents in students' decision-making to attend college.

Career Decision-Making Pattern

The concept of pattern is commonly used in terms of longitudinal career development as described in the Career Pattern Study by Super. But the concept of career decision-making pattern in terms of the decision-making process has been recognized more recently by career decision-making theorists such as Harren (1976), Jepsen (1974a, 1974b), and Dinklage (1967).

Dinklage (1967) developed a classification of decision-making styles by which students can be categorized. Based on discussion of their decision-making in educational, vocational, and personal areas, she identified eight styles: planning, intuitive, complaint, fatalistic, impulsive, delaying, organizing, and paralytic. She described the differences in the use of these styles by students, as well as some differences in style that seemed to be related to sex and

type of school the student attended. According to Miller and Tiedeman (1972), the planning style was viewed as the most effective style, while the intuitive style might sometimes be effective. The remaining styles were considered ineffective or counter-productive.

In the recently developed Assessment of Career Decision Making, Harren (1976) has reduced Dinklage's (1967) eight styles into three categories: planning, intuitive, and dependent. "These categories are based upon the degree to which the individual takes personal responsibility for decision making versus projecting responsibility outward toward fate, peers and authorities; and the degree to which the individual uses rational versus emotional strategies in decision making" (p. 21). Harren describes these three styles as follows:

Planning

This style is characterized by the ability to recognize the consequences of earlier decisions for later decisions. It requires an extended time perspective in which several sequential decisions are viewed as a means-ends chain. The individual anticipates the need to make decisions in the future and prepares for them by seeking information about self and the anticipated situation. The individual's decisions are carried through deliberately and logically. They are effective to the degree that accurate information about the situation is acquired and the individual's self-appraisal is realistic. This style represents the ideal of the self-actualizing decision maker, one who is the architect of one's own future as one lives it.

Intuitive

As in the planning style, the intuitive decision maker accepts responsibility for decision making. The intuitive style, however, involves little anticipation of the future, information-seeking behavior or logical weighing of factors. Rather, it is characterized by the use of fantasy, attention to present feelings, and an emotional self-awareness as the bases for decision making. Commitment to a course of action is reached

relatively quickly, and its basic "rightness" is felt internally. Often the individual cannot state explicitly how he or she decided. This style is less likely to result in effective decision making than the planning style, due to fluctuations over time in the individual's internal state, and to limited capacity to accurately represent an unfamiliar situation in fantasy.

Dependent

Unlike the planning and intuitive styles, the dependent style is characterized by a denial of personal responsibility for decision making and a projection of that responsibility outside of self. The individual is heavily influenced by the expectations and desires authorities and peers have of him or her. One tends to be passive and compliant; to have a high need for social approval; and to perceive the environment as providing restricted or limited options. While this style may reduce the immediate anxiety associated with decision making, it is likely to ultimately result in lack of fulfillment of personal satisfaction. (p. 22)

In order to find out vocational decision-making patterns among noncollege-aspiring adolescents, Jepsen (1974a) treated five decision-making situations: selection of summer activity, senior courses, post high school activity, occupational goals, and 10-year goals. These five vocational decision-making dimensions were applied to the vocational decision-making concepts, such as range, specificity, level, heterogeneity, and consistency. Selection of summer activity and post high school activity, and occupational goal and selection of summer activity showed the highest significant correlations among the other variables. Selection of summer activity, post high school activity, and occupational goals were all related to four performance variables: scholastic ability test scores, grade point average, school-community activities, and self-disclosure. Sex correlated with both selection of summer activity and occupational goals.

Using the same sample, Jepsen (1974b) tried to identify distinctive vocational decision-making patterns (strategy types) as exhibited by subject groups and to describe and contrast the several strategies. He identified twelve different strategy types. The strategy types of Active Planners and Singular Fatalists have been selected for more elaborate description to illustrate differences between types of vocational decision patterns and status and performance characteristics.

The Active Planners stood out among all types as active, knowledgeable, and self-aware decision-makers. The Singular Fatalists narrowed the range of occupations they were considering more than did other types and focused their rationale on self-appraisals. They sought little career information and did not see many of their current actions as relevant to their plans. The Singular Fatalists were the largest of the twelve identifiable types and were predominantly male.

Sex and Career Decision-Making Patterns

Sex appears to be a very significant factor in career decision-making patterns. A random sample of 1,098 new college freshmen was cross-classified by Marks (1972) according to sex and the extent to which the college majors they had selected were saturated with requirements in the natural sciences and mathematics. The effects of sex variables were significant beyond the .05 level. His findings were that while male students tended to select their majors from a larger number of alternatives and were anticipating receiving more extensive education than were female students, female students

reported less knowledge and activity relating to their educational program. He also found that male students placed more value on the training, advanced study preparation, income, and success or recognition outcomes than did the female students. On the other hand, female students were more concerned with the interpersonal, usefulness to society, creativity, and compatibility outcomes of an education and a career than were male students.

In examining the often-repeated assumption that vocational decisiveness increases with advancing age during adolescence, however, Hollender (1971) found that there were no reliable differences in trends between sexes, although there were more females with vocational choices at all grade and age levels.

A study by Hewitt and Goldman (1975) illustrated that college women major in science much less frequently than do college men. Later, by administering the Scholastic Aptitude Test (SAT) to undergraduate students, Goldman and Hewitt (1976) found that mathematical ability appeared to be an important determinant in the choice of a scientific versus nonscientific major field. They reasoned that higher mathematical ability in males was largely, but not entirely, responsible for greater male representation in majors in the field of science. The influence of mathematics in career choice was supported by Goodson (1976). His experience of working with students with open majors showed that a student's relationship with mathematics determined his career choice as much as anything else.

In the change of career choice, sex differences also appear. Healy's (1976) study results with high school seniors showed that

girls tended to make fewer changes than boys. Furthermore, when girls did make a change in level, they tended to raise their level of career choice. Healy explained this phenomenon with the sex stereotyping that leads girls to underestimate their level of aspiration, while boys are expected to achieve a greater degree of success.

According to a study by Titley, Titley, and Wolff (1976) of undergraduate students who changed their majors, a greater degree of specificity was revealed after a change of major. Contrary to theory, however, the proportion of students able to be specific in job choices declined significantly across the college class years. These researchers explained this situation as "pseudocrystallization" (Ginzberg, et al., 1951, p. 126).

Major and Class Level and Career Decision-Making Pattern

Major and class level are good indicators of different career decision-making patterns. The results of a study by Marks (1972) using a freshman sample indicated that students enrolled in natural science/mathematics programs tended to have decided upon their educational program earlier, expected to change their program less often, were more sure of graduating, and felt they would obtain more education, particularly graduate education. On the other hand, these students reported less time spent in career-relevant activities and less approval from their parents regarding their choice of major.

Since many developmental theorists deal with career development in the life stages, it is logical to assume that a developmental trend should be seen in career decision-making too. Biggers (1971) tried to

discover the types of occupational information used, and developmental trends shown, by students. However, no changes in the use of informational categories from grade level to grade level were found to be significant. Increased age and experience did not result in any significant change in the magnitude, ordering, or number of informational categories used in decision-making.

The same trend was found in Wigent's (1974) study of community college students. He utilized some personality variables such as self-concept, academic achievement, educational factors related to the student's family background, and psychological needs. No significant relationships were found between the educational experience of the students and the stability of their career decisions. The results indicated that freshmen and upperclassmen exhibited similar patterns of career selection certainty. However, Hollender (1971) found that female students showed an increase in decisiveness from 12-year-olds to 18-year-olds with considerable variability from age to age.

Decision of Occupational Goal and Career Decision-Making Pattern

Much of the literature on career development counseling deals with the difficulties of career decision-making that are faced at a particular stage of life (Osipow, Carney, & Barak, 1976). In particular, "Vocational decisions during adolescence are often whimsical, and frequently the postponement of a firm career commitment represents a mature decision" (Hollender, 1971, p. 244).

After reviewing a number of studies reporting the percentages of adolescents who are vocationally undecided, Crites (1969) concluded

that the median percentage undecided during high school and college years is approximately 30%. In a longitudinal study, Marr (1965) found that 50% of the subjects did not make a choice until about age 21. Lunneborg (1975b), studying vocational indecision in college students, reported that about 25% of more than 1,600 college students expressed indecision or indecisiveness about their career plan. However, in the Napa County schools in California, Taylor (1966) found that only 23% of the eleventh-grade females and 32% of the eleventh-grade males indicated uncertainty about their career choice.

The results present a confusing picture regarding the difference between vocationally decided and undecided students. Ashby, Wall, and Osipow (1966), Resnick, Fauble, and Osipow (1970), Korman (1967, 1969), and Baird (1969) found some personality and other differences between the vocationally undecided and decided students. On the other hand, Appel, Haak, and Witzke (1970), Baird (1967, 1969), Buck (1970), and Harman (1973) found little difference between the vocationally undecided and decided students.

Vocationally undecided individuals have been described as more anxious (Walsh & Lewis, 1971), more dependent (Ashby, Wall, & Osipow, 1966), and less self-directing (Marr, 1965) than decided persons. Holland and Nichols (1964), studying National Merit Finalists, found vocationally undecided students more creative and more intellectually creative than decided students. Several investigators (Angers, 1961; Iffert, 1957; Weigand, 1951; Elton & Rose, 1970) noted that undecided students have a higher attrition rate than those who make a commitment to a particular vocation at the time of college entrance. In

particular, Elton and Rose (1971), in their longitudinal study of male vocational choice and consistency, reported a major discrepancy in the survival rates of vocationally decided and undecided freshmen: only 17% of the undecided freshmen persisted to graduation in contrast with 43% of those who professed a career commitment.

Rose and Elton (1971) later compared undecided freshmen persisting to college graduation with undecided freshmen who left college by the end of their fourth quarter. At the time of their departure 72% of the leavers were not in good academic standing; the stayers had higher American College Test scores than the leavers. The leavers earned higher Occupational Preference Inventory-Masculine Role and Nonconformity scores than the stayers. With these results, Rose and Elton tentatively concluded that the undecided students represent a population of adolescents undergoing identity confusion.

Lunneborg (1975b, 1976) compared 127 vocationally undecided college graduates matched by sex, age, and major with graduates who had selected an occupation on a Survey of Graduating Seniors. He found that the undecided students had a significantly lower grade point average than did decided students, intended to pursue activities not relating to a career following graduation, were less likely to go to graduate school, and were far less satisfied with their university experience. These undecided students, compared with those students who reported being decided, appeared to differ primarily in the area of abilities and academic achievement and to be less different with respect to the kinds of interests they reported.

Some other studies indicate rather conflicting results. Ashby, Wall, and Osipow (1966) and Baird (1967) found no differences of consequence between decided and undecided students on college achievement, Strong Vocational Interest Blank (SVIB) scores, or background variables, even though Osipow (1973) concluded that "being decided might have something to do with achievement and performance patterns" (p. 67).

Baird (1967) surveyed a sample of 12,000 decided and undecided students and found they did not differ substantially from one another on the American College Measures. In a second sample of nearly 60,000 college-bound students, Baird (1969) found the undecided students to be more intellectually and less vocationally oriented than the students who had made a vocational choice.

Regarding educational-vocational goals, Ashby, Wall, and Osipow (1966) categorized 200 college freshmen as undecided, tentative, or decided. The decided and undecided groups were academically superior to the tentative group. The undecided group showed greater need for dependence. Vocational-educational decisions were not related to clarity of interests. However, Tucci (1963) claimed that the undecided group may very well be the most vocationally healthy of the three groups.

Elton and Rose (1971) studied whether the senior who was vocationally undecided as a freshman differed in regard to personality or ability measures from the senior who persisted in or immigrated to majors categorized according to the Holland scheme. The results of this study supported their early findings (Elton & Rose, 1970) that

there were no differences in measures of personality and ability between persisters in, and immigrants to, each of the Holland categories; further, that ability is an important determinant of eventual occupational choice in the case of the undecided student. Harman (1973) also found no differences between vocationally decided and undecided college students on personality, interest, and ability measures.

One of the most comprehensive studies on decided and undecided students was performed by Nathaniel Sheppard (1971) with college freshmen. He compared decided and undecided freshmen on the basis of socio-economic background, vocational interests, work values, attitudes toward the proper time for making an educational-vocational decision, personality characteristics, self concept, most important goal in attending college, and academic performance in college. For decided students, the most important goal in attending college is vocationally oriented; for undecided students, it is cognitively oriented. Decided students' work values tend to be more extrinsically motivated; those of undecided students tend to be intrinsically motivated to a significant degree. Very little difference between decided and undecided freshmen could be discerned on measures of academic achievement. No significant differences were found in the educational level, income, and type of occupation of parents of decided and undecided freshmen.

Career Maturity

The concept of career maturity has been evolved from the vocational development theory of the 1950's, particularly since the identification and validation of dimensions of career maturity became a major topic for the Career Pattern Study conducted by Super and his colleagues in 1951.

Since then, career maturity has become a term that is applied to all age groups through the work of such vocational development theorists as Super (1953), Super et al. (1957), Super and Overstreet (1960), Tiedeman (1961), Crites (1965), Westbrook and Parry-Hill (1973), Westbrook and Clary (1968), Westbrook and Cunningham (1970), Gribbons and Lohnes (1968), and David Sheppard (1971). In particular, vocational theorists such as Super, Gribbons, Crites, Westbrook, and Sheppard have emphasized the significance of career maturity and have performed extensive studies in the area of career maturity.

Career maturity is one of the most popular and significant, but also complicated and confusing, subjects now in the field of vocational development. "The study of vocational maturity has been challenging to some, disappointing to others, and probably confusing to all" (Bartlett, 1971, p. 212).

Concept of Career Maturity

The basic assumption which underlies the various definitions of career maturity is that vocational behaviors change systematically in certain ways with increasing age (Super, Crites, Hummer, Moser,

Overstreet, & Wernath, 1957). This assumption is supported by Super and Overstreet (1960) and Crites (1965). According to Super (1977), career maturity is defined as "the ability to cope with the vocational or career development tasks with which one is confronted. This ability is compared with that of others who are at the same life stage and facing the same developmental tasks" (p. 294).

Crites (1961) has defined career maturity as having the following five factors: (1) an adolescent's involvement in the process of vocational choice; (2) his orientation toward the problem of vocational choice; (3) his independence in decision-making; (4) his preferences for factors in vocational choice; and (5) his conceptions of vocational choice.

Career maturity has been defined by David Sheppard (1971) as "a level of attainment along a continuum of occupational development which is expressed when selecting a vocation. It includes the person's feelings about a basis for choosing a job and his conceptions of the occupational choice process" (p. 400). According to Hansen and Ansell (1973), "As the individual proceeds through a series of developmental stages he is afforded an opportunity to deal with specific tasks associated with each stage. His ability to cope successfully with tasks reflects his level of vocational maturity" (p. 89).

In reviewing research on career maturity, Bartlett (1971) utilized two general approaches to its study as noted by Crites (1961). The one is the "absolute or relative approach," represented by Super and Gribbons and Lohnes, which is identified in terms of stages of

development and the mastery of tasks associated with them. The other is the "degree and rate approach," characterized by the work of Crites, which uses the individual's own peers as a comparison group.

Sex and Career Maturity

Since Super's introduction in 1953 of the concept of career maturity into the area of vocational development to denote a theoretical point on the continuum of career development, considerable research has been conducted to ascertain those variables that do in fact influence career maturity. However, most of the research has used male subjects as the research sample (Harren, 1966; Healey, 1968; Super & Overstreet, 1960). Therefore, the question of possible differences in career maturity of male and female remained unanswered. More recently some studies have utilized the male-female variable to find out if there is any difference according to sex; these studies show some conflicting results.

Shappell and Hall (1971) found that sex was not a factor in differentiating perceptions of careers. In the study of 200 boys and 200 girls, Super and Forrest (1972) also found no significant differences in career maturity on the basis of sex. Crites (1965) also reported that there was no difference between boys and girls in vocational maturity scores. One extreme case is found in a study by Mathewson and Orton (1963) who reported that relationships among maturity and age, sex, social level of family, type of curriculum, citizenship ratings, cumulative grade point average, intelligence quotient, and scores on achievement tests were not significant.

Walls and Gulkus (1974b) investigated how aspirations, expectations, and goal deflection are related to an individual's career maturity, education, and job reinforcers. Using 149 vocational rehabilitation clients and 51 graduate students as subjects, Walls and Gulkus found no significant sex differences.

In contrast, Lawrence and Brown (1976) asserted "a need for further illumination of the relationship between sex and career maturity" (p. 44). They used multiple regression pressure to develop a further understanding of the relationship of self-concept, intelligence, socioeconomic status, race, and sex to career maturity as measured by the Crites' Career Maturity Inventory (1973). They found that "Super's self-concept theory has more validity when referring to white males than when referring to females or to blacks, in general" (p. 49). Results of this study indicated that intelligence was significantly correlated with career maturity.

According to the results of a study by Davis, Hagen, and Strouf (1962), however, significant differences existed between sexes, i.e., on the Career Development Inventory girls were found to be superior on scales of "Resources of Explanation" and "Information and Decision-Making." This result was supported later by Smith and Herr (1972).

Age and Class Level and Career Maturity

As some definitions of career maturity indicate, the concept of career maturity is based on developmental theory, and age indicates some degree of career maturity, i.e., as one becomes older, one is more vocationally mature. For example, Super and Overstreet (1960)

found that as one becomes older, his vocational choice behavior becomes more involved in the vocational choice process, more independent, more goal directed, and more realistic. Crites (1965) also found that career maturity increases systematically with an increase in age, as well as with an increase in educational attainment.

Montesano and Geist (1964) compared ninth- and twelfth-grade boys to test the hypothesis that vocational decisions occur in a developmental context. The findings supported the hypothesis, i.e., older boys responded with more concern for career opportunities, information about careers, and the social value of given careers than did the ninth-grade boys. Walls and Gulkus (1974b) found older subjects with more education to be more vocationally mature than less educated younger subjects.

However, research results are not consistent. For instance, in the previously mentioned studies by Crites (1965) and Super and Overstreet (1960), and in studies by Super and Forrest (1972) and Wurtz (1969), career maturity was found to be more related to grade level and similarity of experiences than to chronological age, "since grade level in general is a better reflection of maturity during adolescence than age level" (Osipow, 1973, p. 149).

The results of a study by Westbrook and Parry-Hill (1973) support the relationship between career maturity and grade level. In validating the Cognitive Vocational Maturity Test (CVMT), which is designed to measure the cognitive domain of vocational maturity, they found an increase in mean scores with an increase in grade level for

all six of the cognitive variables: fields of work, job selection, work conditions, education requirement, attributes required, and duties.

Hansen and Ansell (1973) found similar results. They administered the Readiness for Career Planning (RCP) scale (Gribbons & Lohnes, 1969) and the Attitude Scale of the Vocational Development Inventory (VDI) (Crites, 1965) to measure the vocational maturity of a cross section of lower and middle class adolescent boys. The results of the study indicated that vocational maturity increased with grade level for all groups. "The means for the total grade group, regardless of socio-economic level, show a progression of vocational maturity until a regression at grade 11" (Hansen & Ansell, 1973, p. 92).

In the same fashion, Jepsen (1975) examined developmental trends concerning career maturity in early ninth to late twelfth grade high school students. Based on Crites' (1969) characteristics of occupational decisions, Jepsen selected the following five vocational development behaviors: exclusion, consistency, specification, choice basis complexity, and resource utilization. The results indicated that high school students displayed behaviors describing a consistent trend toward maturity in educational and vocational decision-making skills and behaviors.

To validate the Adult Vocational Maturity Inventory (AVMI), David Sheppard (1971) compared three different adult groups: unemployed males, male vocational trainees, and male graduate students. The median age of the unemployed males was 40-49, and the median age of graduate students and vocational trainees was 30-39. Sheppard found no

significant age differences in career maturity mean scores between younger and older subjects. In addition, the analysis of educational level indicated no significant differences in career maturity between those with less than a high school education and those who had finished their secondary education. However, the three sample groups differed significantly from one another in some respect. The graduate students showed the highest level of career maturity; the unemployed men, the lowest level; the level of the vocational trainee group was intermediate.

In the study mentioned earlier, Walls and Gulkus (1974b) investigated ways in which aspirations, expectations, and goal deflection are related to an individual's career maturity, education, and job reinforcers. In their study they found that older, brighter subjects who are more vocationally mature displayed greater vocational aspiration as well as greater vocational expectation. More vocationally mature individuals tended to have less goal deflection. Rehabilitation clients had lower aspiration, lower expectation, and greater goal deflection than did graduate students, but there were no significant sex differences.

Career Decision-Making and Career Maturity

Career maturity involves decision-making that is part of an on-going process occurring over a number of years (Hansen & Ansell, 1973). This is particularly true when one realizes that most of the career maturity inventories deal with the concept of decision-making

as one of their subjects. Crites' (1973) Career Maturity Inventory (CMI) regards "Independence in Decision-Making" as one of five clusters of the Attitude Scale. Super and his colleagues (1971) deal with "Information and Decision-Making" in his Career Development Inventory (CDI). In their Cognitive Vocational Maturity Test (CVMT), Westbrook and Parry-Hill (1973) identify "job selection" as the ability to choose the most realistic occupation in terms of one's abilities, interests, and values.

All of these aspects indicate that decision-making and career maturity are related to each other and that each indicates the developmental stage of the other, i.e., if one is vocationally mature, he can make a good career decision, and vice versa.

The most thorough and stimulating study about the relationship between decision-making and career maturity was done by Dilley (1965) about a decade ago. He attempted to evaluate career maturity in terms of decision-making ability. Dilley developed an inventory (Decision-Making Inventory) based on the model of Brim, Glass, Lavan, and Goodman (1962) to measure one's decision-making ability and reported the relationship of scores on the instrument to three correlates of career maturity--intelligence, achievement, and participation in extracurricular activities. After administering the Decision-Making Inventory to 174 randomly selected high school seniors, he found that more students made good decisions than were predictable by chance and that these students had higher academic aptitude test scores (Minnesota Scholastic Aptitude Test) and higher grades and participated more in

extracurricular activities than did students who were not classified as good decision-makers.

Mathewson and Orton (1963) earlier also found a significant relationship between career maturity and extracurricular activities participation. The results indicated that intelligence, academic achievement, and participation in school activities are related to decision-making ability. This positive relationship also suggests that general intelligence factors may be involved in career maturity. Meerbach (1971) revealed almost the same results when he found that creative individuals tended to be more vocationally mature than less creative persons. Dilley (1965) concluded, "Because these are also accepted as correlates of vocational maturity, a relationship between vocational maturity and decision-making ability is implied" (p. 426). He also suggested that "Vocational maturity may well reflect an increase in planning activity, acceptance of responsibility, and a general concern about the making of good decisions. Vocational maturity may also reflect growth in rational decision-making ability" (p. 427).

A decade later, Jepsen (1975), Dilley's student, examined developmental trends concerning career maturity in ninth and twelfth grade high school students. He classified behaviors related to vocational development into the categories of exclusion, consistency, specification, choice basis complexity, and resource utilization to find out the relationship between career decision-making skills and behaviors. The results demonstrated a consistent trend toward maturity in educational and career decision-making skills and

behaviors. Jepsen interpreted the results as indicating construct validity for certain measures of career maturity.

Comparing decided students with undecided students, Thomas (1974) found that students who were able to state their occupational choice had more mature career attitudes than those who could not.

Gaspar and Omvig (1976) administered the Career Maturity Inventory (CMI) (Crites, 1973) and Occupational Plans Questionnaire (OPQ) (Hershenson, 1964) to high school juniors to find out the relationship between the career maturity and occupational plans. The results revealed that scores from the two instruments were not related. The OPQ total score was not related significantly to any of the five CMI competency scores. However, it was correlated significantly to the Attitude Scale score.

The significant relationships which were obtained centered on the three variables: commitment to the stated choice; consistency of the occupation chosen with abilities, values, and interests; and the CMI Attitude Scale score. "This finding would indicate that individuals with low career maturity chose occupations which were inconsistent with their abilities, values, and interests, whereas individuals with higher levels of career maturity tended to choose occupations which were consistent with their abilities, values, and interests" (p. 373). Gaspar and Omvig (1976) concluded that "For optimal occupational planning to take place, the individual should display both a high level of career maturity, thus possessing the competencies and attitudes necessary for sound career decision making, and a high occupational plan score" (p. 374).

Summary

In this chapter, some literature on concepts of career decision-making, some major career decision-making theories, some factors related to career decision-making, career decision-making patterns, career maturity, and the relationship between career decision-making and career maturity were reviewed.

Decision-making concepts are mainly classified as "process" and "outcome." The utility concepts of decision theories gave some bases for the development of career decision-making theories. Then, decision concepts were shifted from economic utility decision theory to psychological decision theory in the 1960's. Various career decision-making theories have emerged since then.

Career decision-making is influenced by numerous factors such as values, particular individuals, culture, race, social class, sex, age, education, and interest. Among these factors, the researcher believes that values and particular individuals perform a significant role in career decision-making.

Work values are formed early, do not change significantly, and show some sex differences. Parents seem to be the most influential figure in students' interest development and career decision-making.

Even though the concept of pattern is commonly used in terms of longitudinal career development, the concept of a career decision-making pattern in terms of process has been recognized more recently by a few career decision-making theorists. However, any standard concept of career decision-making pattern is not established yet.

Sex appears to be a very significant factor in career decision-making patterns. Male college students select their majors from a larger number of alternatives and anticipate more extensive education than female students. Female college students major in science much less frequently than male college students because of their lower mathematical ability. Female students make fewer changes in career choice.

Major seems to be a good indicator of different career decision-making patterns. Students majoring in natural sciences tend to decide upon their educational program earlier and change their program less often. However, no significant relationships appear between the class level and the stability of students' career decisions. Contradictory results are reported regarding the difference between vocationally decided and undecided students.

The concept of career maturity evolved from vocational development theory in the 1950's. The basic assumption of career maturity is that vocational behaviors change systematically in certain ways with increasing age. Few instruments for assessing career maturity have been developed. Sex does not seem to be a significant factor differentiating career maturity. Career maturity increases systematically with an increase in age. However, career maturity is more related to grade level and the similarity of experiences than related to chronological age.

Many research results indicate that decision-making and career maturity are related each other and the one indicates the developmental stage of the other.

In summary, most of the studies on career development deal with adolescent subjects whereas very few studies treat adult subjects. In view of the fact that college years are the period when students make actual career decisions, the importance of dealing with adult samples is apparent.

Another significant point is that there are very few instruments to assess career decision-making processes even though many career decision-making theorists emphasize the procedure of decision-making.

These conclusions from a review of the literature strongly support the need for this study of career decision-making patterns.

CHAPTER III

RESEARCH METHODOLOGY

The purpose of this study was to develop descriptive generalizations about patterns of career decision-making related to the career maturity of university students. This study emphasized decision-making processes rather than decision-making outcomes or characteristics of the decision-maker.

This study was descriptive in nature. According to Isaac and Michael (1975), descriptive research is "the accumulation of a data base that is solely descriptive--it does not necessarily seek or explain relationships, test hypotheses, make predictions, or get at meanings and implications" (p. 18). The steps for the descriptive study are: (1) definition of the objectives, (2) research design, (3) data collection, and (4) report of the results. The research design should clarify the methods of data collection, subject selection, and instrumentation (Isaac & Michael, 1975).

The relationships between the two main criterion variables, career decision-making patterns and career maturity, were examined by utilizing class level, sex, major, and firmness of occupational goals as independent variables. This study also investigated differences in career decision-making patterns and career maturity of university students across each academic class level and all class levels combined,

according to sex, major, and firmness of occupational goals.

The Career Decision-Making Inventory (CDMI) (Appendix A), an instrument specially designed by the researcher for this study, and the Adult Vocational Maturity Inventory (AVMI), Form II (David Sheppard, 1971) (Appendix B) were administered to a population of 527 University of Florida undergraduate students in order to measure career decision-making patterns and career maturity, respectively.

The remainder of this chapter will discuss the following aspects of the research methodology: (1) hypotheses, (2) sample, (3) procedure, (4) instrumentation, (5) data analysis, and (6) limitations of the study.

Hypotheses

The following null hypotheses were tested in this study:

- HO₁: There are no differences in career decision-making patterns of university students on the bases of class level, sex, major, or firmness of occupational goals.
- HO₂: There are no differences in the career maturity of university students on the bases of class level, sex, major, or firmness of occupational goals.
- HO₃: There are no relationships between career decision-making patterns and career maturity of university students on the bases of class level, sex, major, or firmness of occupational goals.

Sample

The sample for this study was drawn from undergraduate students who were currently enrolled during the Fall Quarter, 1977, at the University of Florida in Gainesville, Florida. An attempt was made to obtain approximately 100 subjects from each class level, a total of 400 subjects (100 freshmen, 100 sophomores, 100 juniors, and 100 seniors). A minimum of 70 students in each class level was considered acceptable for the purposes of this study. The attempt met the goal by obtaining more than 100 subjects for each class level except sophomores. However, the smallest group (sophomores) contained 99 subjects which well exceeded the minimum of 70 students per class level. The description of the sample by class level is shown in Table 1, in Chapter IV.

The sample was drawn from classes which included students from the University College and in the Colleges of Arts and Sciences, Business Administration, Agriculture, and Engineering. The selection of colleges was based on the assumption that this particular combination of colleges would yield a more nearly equal distribution of male and female students, as well as science and nonscience major students.

Procedure

In the process of selecting classes, the researcher contacted some of the department chairpersons in each college mentioned above. The selection of departments was based on equal distribution of science

and nonscience major departments. The researcher explained to the chairperson the purpose, nature, and benefits of the study and procedures of data collection and asked for recommendations regarding the appropriate instructors in the department to approach for assistance. As recommended by the chairperson, the instructor selection was made.

These instructors were then contacted by the researcher who explained the purpose and significance of the study, implications of the results, and the procedure of the data collection, including the amount of time required for the data collection (approximately 30 minutes).

When the instructor was willing to participate in the research, arrangements were made to visit the class and to carry out the data collection procedure. However, when the instructor did not wish to participate, the researcher visited the instructor of other classes until the desired minimum number of students (i.e., 70) at each class level was obtained. Even though the course numbering system was assumed to identify each appropriate class level (e.g. a 400-level class was assumed to have mostly seniors; a 300-level, mostly juniors; a 200-level, mostly sophomores; and a 100-level, mostly freshmen), most classes would include students who were in different class levels. Therefore, subjects were classified by class level by the researcher after the instruments were administered in each class.

In each selected class the researcher was introduced by the instructor to explain briefly the purpose of the study and the procedures to be followed as detailed in the cover letter which

accompanied the instruments (Appendix C). Then, the Career Decision-Making Inventory (CDMI) and the Adult Vocational Maturity Inventory (AVMI), Form II were distributed to the subjects by the researcher and instructor. After the subjects completed the instruments, the researcher collected them and expressed his appreciation to the instructor and students for their assistance with the study.

Instrumentation

The Career Decision-Making Inventory (CDMI) and the Adult Vocational Maturity Inventory (AVMI), Form II were used in this study to measure career decision-making patterns and career maturity of university students.

Career Decision-Making Inventory (CDMI)

The Career Decision-Making Inventory (CDMI) was developed for this study by the researcher in order to determine career decision-making patterns of university students. The CDMI is based on three common questions that students might have when they are in the process of career decision-making. These three questions are: "What do I want?" "Whom should I talk to?" and "What should I do?" These three questions relate to values, people, and actions. The CDMI is a 48-item inventory consisting of three sections dealing with values, people, and action. The CDMI utilizes a five-point Likert type response.

The "Values Section" deals with individuals' value systems on which their decision-making is based to answer the question, "What do I want?" The value items listed in this section are based on those used by Super et al. (1971), Centers (1948), Katz (1973), Fretz (1972), Danne (1972), and Harrington and O'Shea (1976).

Since the emphasis of career guidance has shifted from the trait-and-factor approach to the career development approach, the person's value system has become a major concern and values have been studied in various ways by many career development theorists (Herr, 1970). Hoyt (1972) regards values as the beginning point in wise career decision-making. According to a recent study by Williams (1972) dealing with graduate students, work values are significantly related to occupational choice.

The consistency of values is found in a recent study by Kapes and Strickler (1975) who compared the longitudinal development of occupational values of 65 ninth and twelfth grade students. Those values that seemed strong in the ninth grade seemed even stronger in the twelfth grade, while weak ones in the ninth grade seemed weak by the twelfth grade. Research evidence suggests that values are formed at early ages, maintain a degree of consistency, and are not changed significantly through adolescent years; furthermore, these values also are influenced by children's parents, teachers, or other significant adults.

The value items that career decision-making theorists consider important are also consistent. Super (1970) lists economic returns, security, supervisory relations, surroundings, associates, altruism,

achievement, esthetics, creativity, intellectual stimulation, prestige, management, variety, independence, and way of life. Centers (1948) suggests security, prestige, salary, interesting work, advancement, working conditions, relations with others, independence, and benefits.

Fretz (1972) deals with pay received, security, prestige, advancement, variety of duties, working conditions, independence, opportunity to use special talents, challenge, self-satisfaction, and fringe benefits. Katz (1973) shows high income, prestige, independence, helping others, security, variety, leadership, interest fields, leisure, and early entry. Danne (1972) lists money, prestige, teamwork, craftwork, service, supervision, and leadership. Harrington and O'Shea (1976) list job security, prestige, good salary, high achievement, routine activity, variety-diversion, creativity, working with your mind, independence, working with people, leadership, physical activity, work under supervision, and work with your hands. These sources were utilized in the development of the values section of the CDMI.

The "People Section" concerns individuals who are influential in the students' career decision-making. This section identifies social interactions of the decision-maker. Most people tend to seek help from a particular person when a need arises. Who is the particular person? This is the basic question of this section.

Psychological theories of career choice have emphasized the role of an individual in the career decision-making process. Career decisions of students usually require the assistance of others and

tend to be influenced by certain individuals. The influential person is someone who assists, advises, encourages, or who otherwise is perceived by the decision-maker as an important positive factor in making the decision (Watley, 1966). These influential people can be parents, relatives, friends, counselors, or teachers.

Various research results show that parents are the most influential persons. In his study with high school seniors, Kerr (1962) found that parents were seen as providing the most valuable assistance in the decision to attend college, more than all of the other persons combined, although counselors ranked second. According to this study, rankings were as follows: parents, 67.3%; counselor, 8.2%; teachers, 6.1%; relatives, 6.0%; friends, 4.7%; self, 4.1%; and college representatives, 3.6%. Some researchers such as Strong (1957), Werts (1968), and Crites (1962) have found some relationship between parental identification and vocational interest development of late adolescents.

Heilbrun (1969) demonstrated that parental identification was associated with the strength of vocational interest patterning for college males and females. Krippner (1963) found that students' occupational preferences, regardless of sex, were significantly related to fathers' occupation. However, Mowesian's (1966) study results revealed that 71% of all the fathers were in occupational levels other than professional but that 71% of the students aspired to jobs at professional levels.

Watley (1966) compared three different groups of students in an engineering program in terms of persons influencing vocational choice:

no one--those influenced by no one; CT--those influenced by a counselor, teachers, or both; and other--parents, relatives, and/or anyone else given credit by the decision-maker as an influencer. Based on the students' measured scholastic ability, physical science interests, and scholastic achievement in a school of engineering, the results showed that the CT group mean on these tests was significantly higher than the means for either of the other two groups at beyond the 0.01 level of significance. The individuals listed in the CDMI are people whom students contact more frequently in everyday life.

The "Action Section" assesses actual types of behaviors that students might follow when they are in the process of making a decision. "What should I do?" is the question dealt with by this section. "It is important to recognize that decision implies action. Thus, within the concept of decision-making there are behaviors which operate prior to or concurrent with deciding upon a course of action and there are behaviors which are interested in implementing the decision and the action which the decision directs" (Herr, 1970, p. 8).

The behaviors listed in this action section are some possible actions students might take in the decision-making situation. These behaviors are classified as intuitive-emotional behavior, people-seeking behavior, information-gathering behavior, and self-assessing behavior.

The concept of career decision-making type in terms of decision-making process has been recognized more recently by career decision-making theorists such as Dinklage (1967), Jepsen (1974a, 1974b), and Harren (1976). Dinklage (1967) identifies eight decision-making

types: planning, intuitive, complaint, fatalistic, impulsive, delaying, organizing, and paralytic. She found differences in the use of these styles by students and some differences in style by sex and by types of school the students attended. In a recently developed Assessment of Career Decision Making, Harren (1976) has reduced Dinklage's (1967) eight types into three categories: planning, intuitive, and dependent.

In investigating vocational decision-making patterns among noncollege-aspiring adolescents, Jepsen (1974a) utilized five decision-making situations: selection of summer activity, senior courses, post high school activity, occupational goals, and 10-year goals. Based on these situations, Jepsen (1974b) classified twelve vocational decision-making strategy-types.

The CDMI was administered twice to 21 undergraduate students in the University College (8 freshmen, 8 sophomores, 3 juniors, and 2 seniors; 12 males and 9 females) with one week lapse time between testing. The mean and median correlation of the test-retest reliability for the CDMI were .61 and .67, respectively. In order to establish the validity of the instrument, the CDMI and cover letter which explained the purpose and procedure of the study were sent to seven individuals who are prominent in the fields of career development and education. Each individual was asked to answer "yes" or "no" for each item on the basis of his judgment of appropriateness. Five of them returned instruments with comments. One individual could not answer because of the lack of information about the intention of the instrument, and another person checked only the values section.

The rest of the judges agreed on the appropriateness of the items with comments as follows: "Most of these items seem quite relevant. It looks quite comprehensive and I can't think of any to add;" "All items on your instrument seem to be appropriate to me;" and "I feel your lists cover everything quite well. I believe the 'What,' 'Who,' and 'How' will give you some interesting and valuable information."

Adult Vocational Maturity Inventory (AVMI), Form II

The Adult Vocational Maturity Inventory (AVMI), Form II was developed by David Sheppard (1971) to measure vocational maturity in adults because he realized that other career maturity inventories are suitable for use only with pre adolescent or adolescent subjects. "While Crites' items were directed at future vocational planning, the statements in the adult scale were concerned with past occupational decisions" (David Sheppard, 1971, p. 400).

Sheppard designed the AVMI to measure the individual's attitudes in the process of career choice by identifying the following dimensions: (1) Involvement in the vocational choice process, (2) Orientation toward work, (3) Independence in decision-making, (4) Preference for vocational choice factors, and (5) Conceptions of the choice process.

The AVMI contains 40 items. The response format for these items is a 5-point Likert scale ranging from strongly disagree to strongly agree: Strongly agree, 5; Agree, 4; Neutral, 3; Disagree, 2; and Strongly disagree, 1. Possible vocational maturity scores range from 40 to 200. A lower total score indicates greater vocational maturity.

According to David Sheppard's (1971) initial study to validate the AVMI, the AVMI showed a Spearman-Brown split half corrected reliability coefficient of .84, and it was able to differentiate the three sample groups of unemployed men, vocational trainees, and graduate students. Sheppard also found that "there were no significant differences in vocational maturity mean scores between younger and older subjects" (p. 403).

By administering the AVMI, Walls and Gulkus (1974b) investigated reinforcers and vocational maturity in occupational aspirations, expectations, and goal deflection. They discovered that "older, brighter subjects who are more vocationally mature display greater vocational aspiration as well as greater vocational expectation. More vocationally mature individuals tend to have less goal deflection" (p. 339). Walls and Gulkus (1974a) and Loesch, Shub, and Rucker (1977) found no significant differences in the AVMI scores on the basis of sex.

David Sheppard (1971), by employing a chi-square goodness-of-fit test, also demonstrated that AVMI scores are normally distributed within relatively homogeneous groups. However, he admits the limitation of validation of the AVMI and indicates the need for broadening the normative sample.

Data Analysis

In order to determine the differences in career decision-making patterns on the bases of class level, sex, major, and firmness of

occupational goals, the researcher used a $4 \times 2 \times 2 \times 2$ factorial analysis of variance based on the raw scores for each of the 43 variables of the CDMI. The differences in career maturity on the bases of class level, sex, major, and firmness of occupational goals were determined by a $4 \times 2 \times 2 \times 2$ factorial analysis of variance based on the AVMI total scores.

When significant differences were found on the bases of class level, the Student-Newman-Kuels multiple comparison was utilized to determine where the significant differences were.

Pearson Product-moment Correlation Coefficient was applied to determine the relationships between career decision-making patterns and career maturity.

Limitations of the Study

Some limitations of this study are apparent. First, the sample was limited to University of Florida students. Even though the university has a large student population, the students of the University of Florida do not necessarily represent students in general on other campuses. Moreover, because the student participation in this study was voluntary and the researcher was able to use only the classes whose instructors were willing to participate in the study, the sample might be restricted to groups of students with particular characteristics. Because the subjects were not randomly sampled, there might be a representation problem. Therefore, the findings of this study may not be generalizable.

Second, the two instruments used in this study create some limitations. The CDMI did not have any standard scores with which it could be compared. The AVII was validated; however, only a few studies have supported its validity.

Third, since this study dealt only with career decision-making processes, the actual outcome of the students' decision-making was not known.

CHAPTER IV

RESULTS OF THE STUDY

This study investigated differences in career decision-making patterns and career maturity of university students across each undergraduate academic class level and across all class levels combined, according to sex, major, and firmness of occupational goals. The relationships between career decision-making patterns and career maturity of university students were also examined on the bases of class level, sex, major, and firmness of occupational goals. The remainder of this chapter presents: (1) a description of the sample, and (2) the null hypotheses and the results related to these hypotheses.

Description of the Sample

The sample consisted of 527 undergraduate students who were enrolled during the Fall Quarter, 1977, at the University of Florida. Of the 527 subjects, 125 (23.7%) were freshmen; 99 (18.8%), sophomores; 142 (26.9%), juniors; and 161 (30.6%), seniors (Table 1). This sample can be categorized by sex, major, and firmness of occupational goals as follows: 324 (61.5%) males and 203 (38.5%) females (Table 2); 250 (47.7%) science major students and 277 (52.6%)

nonscience major students (Table 3); and 352 (66.3%) decided students and 175 (33.2%) undecided students (Table 4). A more detailed breakdown by sex and major, and by sex and firmness of occupational goals for each class level can be found in Tables 5 and 6. In the case of males, 163 (50.3%) were science major students and 161 (49.7%) were nonscience major students, while, in the case of females, 37 (42.9%) majored in science and 116 (57.1%) were nonscience majors (Table 5).

One interesting finding was that seniors included the highest number of decided students (123 out of a total of 161 seniors, or 76.4%), while sophomores showed the lowest number of decided students (48 out of a total of 99 sophomores, or 48.5%). By class level, the lowest to the highest number of decided students was as follows: sophomores (48, 48.5%), freshmen (79, 63.2%), juniors (102, 71.8%), and seniors (123, 76.4%) (Table 4). This result shows that generally the higher the class level, the more decided students are about their occupational goals, except in the case of sophomores.

Both male and female students had almost the same proportion of decided and undecided students for the total sample population with 66.7% and 67.0%, respectively (Table 6). However, more science major students (72.0%) were decided about their occupational goals than nonscience major students (62.1%) (Table 7).

Table 1
Frequencies of Respondents Broken-down by Class Level

Class Level	N	%
Freshmen	125	23.7
Sophomores	99	18.8
Juniors	142	26.9
Seniors	161	30.6
Total	527	100

Table 2
Frequencies of Respondents Broken-down by Class Level and Sex

Class Level	Sex				Total	%
	Males	%	Females	%		
Freshmen	65	52.0	60	48.0	125	100.0
Sophomores	55	55.6	44	44.4	99	100.0
Juniors	95	66.9	47	33.1	142	100.0
Seniors	109	67.7	52	32.3	161	100.0
All Levels	324	61.5	203	38.5	527	100.0

Note: The frequencies of respondents compare as follows with the total undergraduate enrollments during the Fall Quarter, 1977.

Class Level	Males	%	Females	%	Total	%
Freshmen	2878	57.7	2107	42.3	4985	22.7
Sophomores	2503	58.6	1771	41.4	4274	19.4
Juniors	3948	58.2	2835	41.8	6783	30.9
Seniors	3470	58.5	2457	41.5	5927	27.0
All Levels	12799	58.3	9170	41.7	21969	100.0

Table 3

Frequencies of Respondents Broken-down by Class Level and Major

Class Level	Major				Total	%
	Science	%	Nonscience	%		
Freshmen	63	50.4	62	49.6	125	100.0
Sophomores	33	33.3	66	66.7	99	100.0
Juniors	61	43.0	81	57.0	142	100.0
Seniors	93	57.8	68	42.2	161	100.0
All Levels	250	47.4	277	52.6	527	100.0

Table 4

Frequencies of Respondents Broken-down by Class Level and Firmness of Occupational Goal

Class Level	Firmness of Occupational Goal				Total	%
	Decided	%	Undecided	%		
Freshmen	79	63.2	46	36.8	125	100.0
Sophomores	48	48.5	51	51.5	99	100.0
Juniors	102	71.8	40	28.2	142	100.0
Seniors	123	76.4	38	23.6	161	100.0
All Levels	352	66.8	175	33.2	527	100.0

Table 5
Frequencies of Respondents Broken-down by Class Level,
Sex, and Major

Class Level Sex	Major				Total	%
	Science	%	Nonscience	%		
Freshmen						
Male	37	56.9	28	43.1	65	100.0
Female	26	43.3	34	56.7	60	100.0
Sophomores						
Male	17	30.9	38	69.1	55	100.0
Female	16	36.4	28	63.6	44	100.0
Juniors						
Male	44	46.3	51	53.7	95	100.0
Female	17	36.2	30	63.8	47	100.0
Seniors						
Male	65	59.6	44	40.4	109	100.0
Female	28	53.8	24	46.2	52	100.0
All Levels						
Male	163	50.3	161	49.7	324	100.0
Female	87	42.9	116	57.1	203	100.0
Total	250	47.4	277	52.6	527	100.0

Table 6

Frequencies of Respondents Broken-down by Class Level,
Sex, and Firmness of Occupational Goal

Class Level Sex	Firmness of Occupational Goal				Total	%
	Decided	%	Undecided	%		
Freshmen						
Male	38	58.5	27	41.5	65	100.0
Female	41	68.3	19	31.7	60	100.0
Sophomores						
Male	25	45.5	30	54.5	55	100.0
Female	23	52.3	21	47.7	44	100.0
Juniors						
Male	67	70.5	28	29.5	95	100.0
Female	35	74.5	12	25.5	47	100.0
Seniors						
Male	86	78.9	23	21.1	109	100.0
Female	37	71.2	15	28.8	52	100.0
All Levels						
Male	216	66.7	108	33.3	324	100.0
Female	136	67.0	67	33.0	203	100.0
Total	352	66.8	175	33.2	527	100.0

Table 7

Frequencies of Respondents Broken-down by Class Level,
Major, and Firmness of Occupational Goal

Class Level Major	Firmness of Occupational Goal				Total	%
	Decided	%	Undecided	%		
Freshmen						
Science	39	61.9	24	38.1	63	100.0
Nonscience	40	64.5	22	35.5	62	100.0
Sophomores						
Science	16	48.5	17	51.5	33	100.0
Nonscience	32	48.5	34	51.5	66	100.0
Juniors						
Science	46	75.4	15	24.6	61	100.0
Nonscience	56	69.1	25	30.9	81	100.0
Seniors						
Science	79	84.9	14	15.1	93	100.0
Nonscience	44	64.7	24	35.3	68	100.0
All Levels						
Science	180	72.0	70	28.0	250	100.0
Nonscience	172	62.1	105	37.9	277	100.0
Total	352	66.8	175	33.2	527	100.0

Results Related to the Null Hypotheses

H0₁: There are no differences in career decision-making patterns of university students on the bases of class level, sex, major, or firmness of occupational goals.

On the bases of class level, sex, major, and firmness of occupational goals, a significant difference was found in less than half of the total number of items in the three sections of the Career Decision-Making Inventory. Therefore, H0₁ was not rejected.

The differences in career decision-making patterns on the bases of class level, sex, major, and firmness of occupational goals were analyzed by a 4 x 2 x 2 x 2 factorial analysis of variance (ANOVA) and the Student-Newman-Keuls based on mean scores of the 48 individual items of the CDMI.

The mean scores and standard deviations for each of the 48 items of the CDMI by class level, sex, major, and firmness of occupational goals are presented in Table 8. (Table 8 through Table 15 can be found in Appendix D). Individual scores on each item have a possible range of 1 to 5. An analysis of Table 8 indicates that the mean scores ranged from 1.33 for Resident Assistant (item #28 of the CDMI) to 4.74 for Your Interest in the Field (item #5 of the CDMI) for the total population.

The rank order of mean scores also was calculated by class level, sex, major, and firmness of occupational goals for all students. Rank order is presented in Table 9 for "values," Table 10 for "people," and Table 11 for "actions." The rank order of mean scores for the 17 "value" items was Your Interest in the Field (#5), Self-satisfaction in

Job Tasks (#14), Opportunity to Use Your Special Talents (#11), Potential for Advancement (#4), Opportunity for Intellectual Stimulation (#17), Challenge of Work Tasks (#13), Job Security (#3), Opportunity to Use Your Creative Ideas (#16), Independence in Duties (#8), Working Environment (#6), Variety of Work Duties (#17), Salary (#1), Helping Others (#9), Leadership (#10), Leisure (#12), Fringe Benefits (#15), and Prestige of the Occupation (#2).

The 15 "people" items were rank-ordered as follows: Person Working in Your Chosen Occupation (#31), Father (#18), Mother (#19), Close Personal Friends (#30), Class Instructor (#22), Academic Advisor (#23), Department Chairman (#25), Counselor in the Career Planning and Placement center (#21), Department Coordinator (#24), Counselor in the Psychological and Vocational Counseling Center (#20), State Employment Agent (#32), Roommate (#29), Fraternity Brothers or Sorority Sisters (#27), Resident Assistant in Residence Halls (#23), and Student Personnel Dean (#26).

The 16 "action" items showed a rank order of Talk to a Person Working in the Occupation You Are Interested In (#41), Get Some Information About the Occupation You Are Interested In (#44), Self-assess Your Own Strengths and Limitations (#46), Visit Work Sites (#45), Check Resources Indicating Trends in Future Job Openings (#42), Follow Your Own Intuition (#34), Talk to Parents (#39), Talk to Personal Friends (#38), Take Some Tests to Assess Your Aptitudes and Interests (#47), Talk to Class Instructor (#40), Read Some Literature About How to Make Career Decisions (#43), Review Materials in the Career Resource Center (#48), See a Counselor in the Career Planning

and Placement Center (#37), Postpone the Decision Until Something Comes Along (#35), Choose Any Available Occupation for a Trial Period (#33), and See a Counselor in the Psychological and Vocational Counseling Center (#36).

This rank order result was consistent with all groups classified by class level, sex, major, and firmness of occupational goals. More detailed results for each of these groups can be found in Tables 9, 10, and 11.

Table 12 presents summaries of the factorial analysis of variance for the 48 items of the CDMI by class level, sex, major, and firmness of occupational goals. In the following sections the results are presented by class level, sex, major, and firmness of occupational goals for the "values," "people," and "action" categories.

Values Category

Class level. The mean scores for the 17 "value" items of the CDMI ranged from 3.15 for sophomores on Prestige of the Occupation (#2) to 4.84 for juniors on Your Interest in the Field (#5) (Table 8).

Significant differences were found on 6 of the 17 "value" items (Table 12). On Salary (#1), freshmen differed significantly from juniors and seniors. Freshmen had a mean score of 4.00, while juniors and seniors had mean scores of 3.63 and 3.70, respectively. On Prestige of the Occupation (#2), freshmen differed significantly from sophomores, juniors, and seniors; and sophomores differed significantly from seniors. The mean scores were 3.47 for freshmen, 3.15 for sophomores, 3.27 for juniors, and 3.33 for seniors.

Freshmen also had a significantly different mean score from sophomores, juniors, and seniors on Job Security (#3). The mean score for freshmen was 4.27, while for both sophomores and seniors it was 4.03, and for juniors it was 4.06. Juniors differed significantly from seniors on Your Interest in the Field (#5) with mean scores of 4.84 and 4.65, respectively. On Variety of Work Duties (#7), the mean score for freshmen showed a significant difference from that of juniors. These mean scores were 3.76 for freshmen and 4.03 for juniors. On Independence in Duties (#8), juniors had a mean score of 4.20, while freshmen had a mean score of 3.90, indicating a significant difference.

Sex. The mean scores for the 17 "value" items of the CDMI ranged from 3.28 for females and 3.34 for males on Prestige of the Occupation (#2) to 4.69 for males and 4.81 for females on Your Interest in the Field (#5) (Table 8).

Statistically significant differences between males and females did exist on 5 of the 17 "value" items (Table 12). Males differed significantly from females on Salary (#1) with mean scores of 3.85 and 3.70, respectively. On Your Interest in the Field (#5), females had a mean score of 4.81, while males had a mean score of 4.69. Males (3.81) and females (4.05) had significantly different mean scores on Variety of Work Duties (#7). On Self-satisfaction in Job Tasks (#14), females had a mean score of 4.70, and males, 4.55. On Fringe Benefits (#15), males differed significantly from females, with mean scores of 3.41 and 3.30, respectively.

Major. The mean scores for the 17 "value" items of the CDMI ranged from 3.14 for science major students on Prestige of the Occupation (#2) and 3.42 for nonscience major students on Fringe Benefits (#15), to 4.77 for science major students and 4.71 for nonscience major students on Your Interest in the Field (#5).

Statistically significant differences were found on 6 of the 17 "value" items (Table 12). Nonscience major students had a significantly different mean score from the science major students on Salary (#1), with mean scores of 3.88 and 3.69, respectively. On Prestige of the Occupation (#2), nonscience major students differed significantly from science major students with mean scores of 3.47 and 3.14, respectively. On Leadership (#10), nonscience major students had a significantly different mean score (3.90) from science major students (3.58). On Potential for Advancement (#4), nonscience major students had a mean score of 4.34, while science major students had a mean score of 4.19. On Working Environment (#6), science major students had a significantly higher mean score than did nonscience major students with mean scores of 4.18 and 3.87, respectively. On Helping Others (#9), the mean score for science major students was 3.90, while that of nonscience major students was 3.65.

Firmness of occupational goals. The mean scores for the 17 "value" items of the CDMI ranged from 3.26 for undecided students and 3.34 for decided students on Prestige of the Occupation (#2), to 4.73 for undecided students and 4.74 for decided students on Your Interest in the Field (#5).

Only 4 of the 17 "value" items showed statistically significant differences. On Independence in Duties (#8), decided students differed significantly from undecided students, with mean scores of 4.12 and 3.91, respectively. Decided students also differed significantly from undecided students on Helping Others (#9) with mean scores of 3.86 and 3.55, respectively. On Leadership (#10), decided students had a mean score of 3.86 and undecided students had that of 3.51. On Challenge of Work Tasks (#13), decided students had a significantly higher mean score than undecided students, with mean scores of 4.23 and 4.05, respectively. Therefore, on all of these items, mean scores for decided students were significantly higher than those of undecided students.

Interactions. A significant two-way interaction between sex and class level occurred on Helping Others (#9). The highest combination was freshman females and the lowest, freshman males. On both Job Security (#3) and Working Environment (#6), a significant four-way interaction was found. Undecided nonscience major freshman males had the highest combination and undecided science major junior females, the lowest, on Job Security (#3). On Working Environment (#6), the highest combination was found in undecided freshman and junior science major females, while undecided freshman science major males had the lowest combination.

People Category

Class level. The mean scores for the 15 "people" items of the CDMI ranged from 1.23 for seniors on Resident Assistant in Residence

Halls (#28) to 4.06 for freshmen on Person Working in Your Chosen Occupation (#31) (Table 8).

Table 12 indicates no statistically significant differences on the basis of class level were found on Father (#18), Mother (#19), Class Instructor (#22), Academic Advisor (#23), Roommate (#29), Close Personal Friends (#30), and Person Working in Your Chosen Occupation (#31).

However, statistically significant differences were found on 8 of the 15 "people" items (Table 12). On Counselor in the Psychological and Vocational Counseling Center (#20), freshmen differed significantly from seniors and juniors, with mean scores of 2.41, 1.76, and 2.06, respectively. Sophomores had a significantly different mean score (2.38) from juniors (2.06) and seniors (1.76). Juniors also differed significantly from seniors with mean scores of 2.06 and 1.76, respectively.

On Counselor in the Career Planning and Placement Center (#21), freshmen had a significantly higher mean score (2.51) than juniors (2.30) and seniors (2.06). Sophomores also had a significantly higher mean score (2.69) than did juniors and seniors. On Department Coordinator (#24), the mean score for freshmen (2.65) differed significantly from that of juniors (2.19) and seniors (2.14). Sophomores also had a significantly different mean score (2.51) from that of juniors and seniors.

On Department Chairman (#25), the mean score for freshmen (2.70) differed significantly from that of juniors (2.24) and seniors (2.29). The mean score of sophomores was 2.62, which was significantly higher

than that of both juniors and seniors. On Student Personnel Dean (#26), the mean score for freshmen was 2.10, which was significantly different from juniors and seniors with their mean scores of 1.70 and 1.54, respectively. With a mean score of 1.92 sophomores also differed significantly from seniors.

Freshmen had a mean score of 1.80 on the Fraternity Brothers or Sorority Sisters (#27), while seniors and juniors had mean scores of 1.41 and 1.52, respectively. The mean score of 1.70 for sophomores also differed significantly from that of seniors. On the Resident Assistant in Residence Halls (#28), seniors had a significantly lower mean score of 1.23, while freshmen and sophomores had mean scores of 1.46 and 1.44, respectively. On State Employment Agent (#32), freshmen (2.12) differed significantly from sophomores (1.99), juniors (1.91), and seniors (1.65).

Sex. The mean scores for the 15 "people" items of the CDMI ranged from 1.31 for males and 1.37 for females on Resident Assistant in Residence Halls (#28), to 4.06 for males and 4.05 for females on Person Working in Your Chosen Occupation (#31) (Table 8).

Only 3 of the 15 "people" items showed a statistically significant difference between males and females (Table 12). On Mother (#19), females had a significantly higher mean score (3.20) than males (2.79). On Department Coordinator (#24), the mean score for females was 2.50, while that of males was 2.24. However, on Fraternity Brothers or Sorority Sisters (#27), the mean score for males was significantly higher than that of females with mean scores of 1.64 and 1.50, respectively.

Major. The mean scores for the 15 "people" items of the CDMI ranged from 1.32 for science major students and 1.35 for nonscience major students on Resident Assistant in Residence Halls (#28) to 3.91 for science major students and 3.94 for nonscience major students on Person Working in Your Chosen Occupation (#31) (Table 8).

Only 2 of the 15 "people" items showed a statistically significant difference between science major students and nonscience major students. On Fraternity Brothers or Sorority Sisters (#27), nonscience major students had a significantly higher mean score than science major students, their mean scores being 1.75 and 1.40, respectively. Nonscience major students also had a significantly higher mean score on Close Personal Friends (#30) than science major students with mean scores of 2.85 and 2.54, respectively.

Firmness of occupational goals. The mean scores for the 15 "people" items of the CDMI ranged from 1.31 for undecided students and 1.34 for decided students on Resident Assistant in Residence Halls (#28), to 3.98 for undecided students and 3.90 for decided students on Person Working in Your Chosen Occupation (#31) (Table 8).

In the case of decided and undecided students, 3 of the 15 "people" items had statistically significant differences (Table 12). On Counselor in the Psychological and Vocational Counseling Center (#20), undecided students differed significantly from decided students with means of 2.29 and 2.30, respectively. On Counselor in the Career Planning and Placement Center (#21), undecided students also had a significantly higher mean score than decided students with mean scores of 2.54 and 2.25, respectively. The mean score for undecided students

was also significantly higher on State Employment Agent (#32) than that of decided students with mean scores of 2.10 and 1.79, respectively. On these three items, undecided students had significantly higher mean scores than decided students.

Interactions. A significant two-way interaction between sex and firmness of occupational goals occurred in the case of Academic Advisor (#23) and Close Personal Friends (#30). On Academic Advisor (#23), decided females had the highest combination and undecided males, the lowest. On Close Personal Friends (#30), the highest combination was undecided females, and the lowest, decided females. Significant two-way interactions between major and firmness of occupational goals, and between major and class level were found on State Employment Agent (#32) and Person Working in Your Chosen Occupation (#31), respectively. The lowest combination was shown by decided science major students, and the highest, by undecided science major students, on State Employment Agent (#32). On Person Working in Your Chosen Occupation (#31), science major freshmen had the highest combination and science major seniors had the lowest. A significant three-way interaction of class level, major, and firmness of occupational goals occurred on Mother (#19). The highest combination was decided nonscience major freshmen, and the lowest, decided nonscience major juniors.

Action Category

Class level. Among 16 "action" items of the CDMI, the lowest mean score was 1.88 for seniors on See a Counselor in the Psychological and

Vocational Counseling Center (#36), and the highest mean score was 4.38 for seniors on Talk to Person Working in the Occupation You Are Interested In (#41) (Table 8).

Four of the 16 "action" items were found to be significantly different on the basis of class level (Table 12). On See a Counselor in the Psychological and Vocational Counseling Center (#36), sophomores had a significantly different mean score (2.40) from juniors (1.94) and seniors (1.89). Freshmen also had a mean score (2.39) significantly higher than those of juniors and seniors. On See a Counselor in the Career Planning and Placement Center (#37), with a mean score of 2.82, freshmen differed significantly from juniors (2.30) and seniors (2.40). Sophomores also had a significantly higher mean score (2.74) than juniors and seniors.

On Check Resources Indicating Trends in Future Job Openings (#42), freshmen differed significantly from seniors with mean scores of 4.06 and 3.72, respectively. On Take Some Tests to Assess Your Aptitudes and Interests (#47), freshmen had a mean score of 3.30, while juniors and seniors had scores of 2.87 and 2.86, respectively.

Sex. The mean scores for the 16 "action" items of the CDMI ranged from 2.07 for males and 2.19 for females on See a Counselor in the Psychological and Vocational Counseling Center (#36) to 4.37 for both males and females on Talk to Person Working in the Occupation You Are Interested In (#41) (Table 8).

Significant differences between males and females were found on only 2 items of the 16 "action" items (Table 12). On both Self-assess Your Own Strengths and Limitations (#46) and Review Materials in the

Career Resource Center (#43), the mean score for females was significantly higher than that for males. On the former item, the mean score for females was 4.13, and for males, 3.99. On the latter item, mean scores were 2.73 and 2.45 for females and males, respectively.

Major. The mean scores for the 16 "action" items of the CDMI ranged from 2.06 for science major students and 2.18 for nonscience major students on See a Counselor in the Psychological and Vocational Counseling Center (#36), to 4.42 for science major students and 4.32 for nonscience major students on Talk to Person Working in the Occupation You Are interested In (#41) (Table 8).

Four of the 16 "action" items were found to be significantly different on the basis of majors (Table 12). On Choose Any Available Occupation for a Trial Period (#33), nonscience major students had a significantly higher mean score of 2.22, while science major students had a mean score of 2.10. Nonscience major students also had a higher mean score on Postpone the Decision Until Something Comes Along (#35) than did science major students. Their mean scores were 2.54 and 2.43, respectively. On See a Counselor in the Psychological and Vocational Counseling Center (#36), nonscience major students differed significantly from science major students, with mean scores of 2.18 and 2.06, respectively.

On the above three items, nonscience major students had significantly different mean scores than did science major students. However, on Visit Work Sites (#45), science major students had a

significantly higher mean score of 4.10, while that of nonscience major students was 3.76.

Firmness of occupational goals. On the basis of firmness of occupational goals, the mean scores for the 16 "action" items of the CDMI ranged from 2.01 for decided students and 2.34 for undecided students on See a Counselor in the Psychological and Vocational Counseling Center (#36), to 4.42 for decided students on Talk to Person Working in the Occupation You Are Interested In (#41) and 4.30 for undecided students on Get Some Information About the Occupation You Are Interested In (#44) (Table 8).

Five of the 16 "action" items were found to be significantly different for decided and undecided students (Table 12). On Choose Any Available Occupation For a Trial Period (#33), undecided students differed significantly from decided students, with mean scores of 2.45 and 2.02, respectively. Undecided students also had a significantly higher mean score (2.79) than did decided students (2.37) on Postpone the Decision Until Something Comes Along (#35).

On See a Counselor in the Psychological and Vocational Counseling Center (#36), undecided students had a mean score of 2.34, while that of decided students was 2.01. On See a Counselor in the Career Planning and Placement Center (#37), the mean score for undecided students also was significantly higher than that of decided students, with mean scores of 2.76 and 2.43, respectively. On Review Materials in the Career Resource Center (#48), the mean score for undecided students was 2.70, while that of decided students was 2.49. On all of

the five significant items, undecided students had significantly higher mean scores than did decided students.

Interactions. A significant two-way interaction of sex and firmness of occupational goals occurred on Postpone the Decision Until Something Comes Along (#35) and Take Some Tests to Assess Your Aptitudes and Interests (#47). On Postpone the Decision Until Something Comes Along (#35), undecided males showed the highest combination and decided males, the lowest. On Take Some Tests to Assess Your Aptitudes and Interests (#47), the highest combination was undecided females and the lowest combination was undecided males. A significant three-way interaction of sex, major, and firmness of occupational goals occurred on Postpone the Decision Until Something Comes Along (#35). Undecided science major males had the highest combination and decided science major males had the lowest combination. Another three-way interaction of class level, major, and firmness of occupational goals was found on Talk to Parents (#39) and Get Some Information About the Occupation You Are Interested In (#44). On Talk to Parents (#39), the highest combination was decided nonscience major freshmen and the lowest combination was undecided science major juniors. On Get Some Information About the Occupation You Are Interested In (#44), decided science major sophomores had the highest combination and undecided science major seniors had the lowest combination. A significant four-way interaction of class level, sex, major, and firmness of occupational goals occurred on Visit Work Sites (#45). In this interaction, undecided science major freshman males

had the highest combination and decided nonscience major freshman males had the lowest combination.

HO₂: There are no differences in the career maturity of university students on the bases of class level, sex, major, or firmness of occupational goals.

A significant difference in the career maturity of university students was found on the bases of sex and firmness of occupational goals. However, there was no significant difference on the bases of class level and major. Therefore, HO₂ was partially rejected.

The differences in career maturity on the bases of class level, sex, major, and firmness of occupational goals were analyzed by a 4 x 2 x 2 x 2 factorial analysis of variance (ANOVA) and a Student-Newman-Keuls based on mean scores of the Adult Vocational Maturity Inventory.

The mean scores and standard deviations of the AVMI by class level, sex, major, and firmness of occupational goals are shown in Table 13. The possible score on the AVMI ranges from 40 to 200, and it should be noted that lower scores indicate higher levels of career maturity.

The lowest mean score was 91.63 for sophomore females and the highest mean score, 102.39 for undecided seniors, i.e., sophomore females had the highest level of career maturity and undecided seniors, the lowest. The mean score for the total population was 96.83.

Class Level

The mean scores of the AVMI by class level ranged from 96.10 for seniors and 98.09 for freshmen. Sophomores and juniors had mean scores of 96.16 and 97.20, respectively (Table 13). The results showed that in terms of career maturity seniors were the most mature group, while freshmen were the least mature group. However, sophomores were found to be more mature than juniors, even though sophomores had the higher number of undecided students.

Although differences in mean scores across class levels did exist, none of them was found to be statistically significant (Table 14). Therefore, there was no significant difference in career maturity of university students on the basis of class level.

Sex

As Table 14 indicates, the mean score for males on the AVMI was 98.62, and for females, 94.10. This trend was consistent through all class levels and was found to be statistically significant. Thus, college females in the sample tended to have significantly higher levels of career maturity than did college males.

Major

For all class levels, the mean score of science major students on the AVMI was 96.96, and for nonscience major students, 96.80 (Table 13). These scores were not significantly different. The differences in each class level were also not consistent. For freshmen and juniors, science major students had slightly lower mean scores (97.68

and 96.67, respectively) than did nonscience major students (93.50 and 97.59, respectively). However, for sophomores and seniors, the mean scores for nonscience major students (96.03 and 95.06, respectively) were lower than those of science major students (96.42 and 96.86, respectively). Therefore, no significant differences existed between science major students and nonscience major students in terms of career maturity.

Firmness of Occupational Goals

Decided students had a mean score of 95.35, while undecided students had a mean score of 99.95 (Table 13). The difference was statistically significant (Table 14), and the trend consistent with each class level. However, the differences in mean scores between decided and undecided students were increased as the class level advanced. For freshmen, mean scores for decided and undecided students were 97.54 and 99.02, respectively, the difference being 1.48. Decided and undecided sophomores had mean scores of 94.48 and 97.27, respectively; the difference was 2.29.

For juniors, mean scores of decided and undecided students were 95.27 and 102.10, respectively (difference, 6.83). Mean scores of decided and undecided seniors were 94.15 and 102.39, respectively; the difference was 8.24. The difference in mean scores for all class levels was 4.60. Therefore, decided students tended to have a significantly higher level of career maturity than undecided students.

Interactions

Significant two-way interactions between class level and major, and between firmness of occupational goals and class level occurred. For the former interaction, the highest combination was nonscience major freshmen, and the lowest, nonscience major seniors. For the latter interaction, the highest combination was undecided seniors, and the lowest, decided seniors. There was also a significant three-way interaction of class level, major, and firmness of occupational goals. Undecided science major seniors had the highest combination, while decided nonscience major seniors showed the lowest combination.

H0₃: There are no relationships between career decision-making patterns and career maturity of university students on the bases of class level, sex, major, or firmness of occupational goals.

Value items and people items of the CDMI had a significant correlation with the AVMI on the bases of class level, sex, major, and firmness of occupational goals. However, action items were not found to correlate significantly with the AVMI. Therefore, H0₃ was partially rejected.

The relationships between career decision-making patterns and career maturity on the bases of class level, sex, major, and firmness of occupational goals were determined by analyzing correlations between scores for each of the 43 CDMI items and AVMI total scores. The Pearson Product-moment Correlation Coefficient was applied with the significance level of .05. The correlation between the scores of

each item of the CDMI and AVMI total scores are presented in Table 15 by class level, sex, major, and firmness of occupational goals.

The results revealed that significant correlations between 29 of the 48 CDMI items and the total scores of the AVMI were found. Nine of these 29 significant items showed a negative correlation with the AVMI. Actually, this inverse relationship indicates the same direction, while the positive relationship denotes the opposite direction. Therefore, lower scores on the AVMI indicate higher levels of career maturity and higher scores show lower levels of career maturity.

Thirteen of the 17 "value" items of the CDMI had a significant correlation with the AVMI. Of these 13 items, 9 had a negative correlation with the AVMI; these were the only items having an inverse relationship with the AVMI. The CDMI items having a positive correlation with the AVMI were Salary (#1), Prestige of the Occupation (#2), Leisure (#12), and Fringe Benefits (#15). The AVMI had a negative correlation with the following 9 items of the CDMI: Your Interest in the Field (#5), Variety of Work Duties (#7), Independence in Duties (#8), Helping Others (#9), Opportunity to Use Your Special Talents (#11), Challenge of Work Tasks (#13), Self-satisfaction in Job Tasks (#14), Opportunity to Use Your Creative Ideas (#16), and Opportunity for Intellectual Stimulation (#17). The higher the level of career maturity, the more likely students tended to score high on these items.

Nine of the 15 "people" items of the CDMI showed a significant positive correlation with the AVMI. These items were Father (#18),

Mother (#19), Counselor in the Psychological and Vocational Counseling Center (#20), Department Chairman (#25), Roommate (#29), Close Personal Friends (#30), and State Employment Agent (#32). Therefore, the lower the level of career maturity, the more likely were students to choose these items.

Only 7 of the 16 "action" items of the CDMI had a significant positive correlation with the AVMI. These 7 items included Choose Any Available Occupation for a Trial Period (#33), Postpone the Decision Until Something Comes Along (#35), See a Counselor in the Psychological and Vocational Counseling Center (#36), See a Counselor in the Career Planning and Placement Center (#37), and Read Some Literature About How to Make Career Decisions (#43). Since these items were positively correlated, students with lower levels of career maturity tended to choose them. Hereafter, the results of the relationships between each item of the CDMI and the AVMI are presented on the bases of class level, sex, major, and firmness of occupational goals.

Values Category

Class level. The AVMI was found to correlate significantly with 15 of the 17 "value" items of the CDMI on the basis of class level. Ten of these 15 CDMI items showed a negative correlation (Table 15).

For freshmen, 3 items of the CDMI had a negative correlation with the AVMI. These included Independence in Duties (#8), Opportunity to Use Your Special Talents (#11), and Challenge of Work Tasks (#13).

For sophomores, 4 items had a negative correlation, while 2 items

showed a positive correlation. The 4 items having a negative correlation were Your Interest in the Field (#5), Independence in Duties (#8), Helping Others (#9), and Challenge of Work Tasks (#13). Salary (#1) and Fringe Benefits (#15) had a positive correlation with the AVMI. Only positive correlations were found for juniors on the following 5 items: Salary (#1), Prestige of the Occupation (#2), Potential for Advancement (#4), Leisure (#12), and Fringe Benefits (#15).

Seniors showed the highest number of correlations among the four class levels with 8 negative and 2 positive correlations. The 8 items having a negative correlation with the AVMI were Your Interest in the Field (#5), Variety of Work Duties (#7), Independence in Duties (#8), Leadership (#10), Challenge of Work Tasks (#13), Self-satisfaction in Job Tasks (#14), Opportunity to Use Your Creative Ideas (#16), and Opportunity for Intellectual Stimulation (#17). The higher the level of career maturity, the more likely students tended to score high on these 8 items. Salary (#1) and Prestige of the Occupation (#2) had a positive correlation with the AVMI. The lower the level of career maturity, the more likely students tended to consider these items in their career decision-making.

Sex. Fourteen of the 17 "value" items of the CDMI had a significant correlation with the AVMI on the basis of sex. For both males and females, 6 items had a negative correlation and 3 items a positive correlation. The 6 items with a negative correlation were Your Interest in the Field (#5), Independence in Duties (#8), Helping Others (#9), Opportunity to Use Your Special Talents (#11), Challenge

of Work Tasks (#13), and Opportunity to Use Your Creative Ideas (#16). A positive correlation was found on Salary (#1), Prestige of the Occupation (#2), and Leisure (#12).

Males had only a positive correlation on Job Security (#3), Potential for Advancement (#4), and Fringe Benefits (#15), while females had a negative correlation on Variety of Work Duties (#7) and Opportunity for Intellectual Stimulation (#17).

Major. On the basis of major, 16 of the 17 "value" items showed a significant correlation with the AVMI. Ten of these items had a negative correlation. For both science and nonscience major students, Salary (#1), Leisure (#12), and Fringe Benefits (#15) had a positive correlation; while Your Interest in the Field (#5), Independence in Duties (#8), and Challenge of Work Tasks (#13) were correlated inversely.

For science major students, Prestige of the Occupation (#2), Job Security (#3), and Potential for Advancement (#4) had a positive correlation; while Working Environment (#6), Helping Others (#9), Opportunity to Use Your Special Talents (#11), Self-satisfaction in Job Tasks (#14), Opportunity to Use Your Creative Ideas (#16), and Opportunity for Intellectual Stimulation (#17) showed a negative correlation. However, Variety of Work Duties (#7) had a negative correlation only for nonscience major students.

Firmness of occupational goals. Fourteen of the 17 "value" items of the CDMI had a significant correlation with the AVMI on the basis of firmness of occupational goals. A negative correlation was found on 8 items (Table 15).

For both decided students and undecided students, Prestige of the Occupation (#2) and Fringe Benefits (#15) showed a positive correlation, while Your Interest in the Field (#5), Independence in Duties (#8), Opportunity to Use Your Special Talents (#11), Challenge of Work Tasks (#13), and Opportunity for Intellectual Stimulation (#17) were correlated inversely with the AVMI. A positive correlation on Salary (#1), Job Security (#3), Potential for Advancement (#4), and Leisure (#12), as well as a negative correlation on Helping Others (#19) and Opportunity to Use Your Special Talents (#11) were found for decided students. However, only Opportunity to Use Your Creative Ideas (#16) was found to have a positive correlation for undecided students.

People Category

Class level. Eleven of the 15 "people" items of the CDMI were found to correlate significantly with the AVMI on the basis of class level (Table 15). For freshmen, Father (#18), Mother (#19), and Class Instructor (#22) had a significant correlation with the AVMI. The AVMI was found to correlate significantly for sophomores on Counselor in the Career Planning and Placement Center (#21), Department Coordinator (#24), Department Chairman (#25), and Student Personnel Dean (#26). Only Close Personal Friends (#30) and State Employment Agent (#32) showed a significant correlation with the AVMI for juniors. For seniors, the following 4 items were found to correlate significantly with the AVMI: Counselor in the Psychological and Vocational Counseling Center (#20), Roommate (#29), Close Personal

Friends (#30), and State Employment Agent (#32). Therefore, students with lower levels of career maturity tended to choose the 11 items mentioned above.

Sex. Twelve of the 15 "people" items of the CDMI were found to correlate significantly with the AVMI on the basis of sex (Table 15). For both males and females Father (#18) and Close Personal Friends (#30) showed a significant correlation with the AVMI. Mother (#19) and Fraternity Brothers or Sorority Sisters (#27) had a significant correlation with the AVMI only for females, while the following 8 items had a significant correlation only for males: Counselor in the Psychological and Vocational Counseling Center (#20), Counselor in the Career Planning and Placement Center (#21), Class Instructor (#22), Department Coordinator (#24), Student Personnel Dean (#26), Roommate (#29), and State Employment Agent (#32). Thus, the lower the level of students' career maturity, the more likely they were to choose these items.

Major. Ten of the 15 "people" items of the CDMI were significantly correlated with the AVMI on the basis of major (Table 15). Only Close Personal Friends (#30) was found to correlate significantly for both science and nonscience major students. For the latter group, only Person Working in Your Chosen Occupation (#31), besides Close Personal Friends (#30), had a significant correlation with the AVMI.

For science major students, 9 items were found to correlate significantly with the AVMI. These included Father (#18), Mother (#19), Counselor in the Psychological and Vocational Counseling Center

(#20), Department Chairman (#25), Student Personnel Dean (#26), Fraternity Brothers or Sorority Sisters (#27), Roommate (#29), Close Personal Friends (#30), and State Employment Agent (#32).

Firmness of occupational goals. Only 6 of the 15 "people" items showed a significant correlation with the AVMI on the basis of firmness of occupational goals (Table 15). Father (#18), Mother (#19), Fraternity Brothers or Sorority Sisters (#27), and Close Personal Friends (#30) had a significant correlation with the AVMI for decided students; while Student Personnel Dean (#26) and State Employment Agent (#32) revealed a significant correlation with the AVMI for undecided students.

On "people" items, therefore, the lower the level of students' career maturity, the more likely students were to choose the items having a significant correlation with the AVMI.

Action Category

Class level. Seven of the 16 "action" items of the CDMI were correlated significantly with the AVMI on the basis of class level (Table 15). For freshmen, See a Counselor in the Career Planning and Placement Center (#37) and Talk to Parents (#39) showed a significant correlation with the AVMI. Choose Any Available Occupation for a Trial Period (#33) and See a Counselor in the Psychological and Vocational Counseling Center (#36) were found to correlate significantly with the AVMI for sophomores. For both juniors and seniors Choose Any Available Occupation for a Trial Period (#33), Postpone the Decision Until Something Comes Along (#35), and Read Some

Literature About How to Make Career Decision (#43) had a significant correlation with the AVMI.

Sex. On the basis of sex, 9 of the 16 "action" items of the CDMI were correlated significantly with the AVMI (Table 15). Choose Any Available Occupation for a Trial Period (#33), Postpone the Decision Until Something Comes Along (#35), and Talk to Parents (#39) revealed a significant correlation with the AVMI for both males and females. In addition to these three items, 5 items correlated significantly for males, and only 1 item was found to correlate significantly with the AVMI for females. The 5 items for males were See a Counselor in the Psychological and Vocational Counseling Center (#36), See a Counselor in the Career Planning and Placement Center (#37), Check Resources Indicating Trends in Future Job Openings (#42), Read Some Literature About How to Make Career Decisions (#43), and Review Materials in the Career Resource Center (#48). The only one significantly correlated item for females was Talk to Personal Friends (#38).

Major. Nine of the 16 "action" items of the CDMI were found to correlate significantly with the AVMI on the basis of major (Table 15). For both science major students and nonscience major students, Choose Any Available Occupation for a Trial Period (#33), Postpone the Decision Until Something Comes Along (#35), and Talk to Parents (#39) had a significant correlation with the AVMI. These were the same items that had a significant correlation on the basis of sex, as described earlier.

In addition to these 3 items, for science major students, See a Counselor in the Career Planning Placement Center (#37), Check

Resources Indicating Trends in Future Job Openings (#42), Read Some Literature About How to Make Career Decisions (#43), and Review Materials in the Career Resource Center (#43) had a positive correlation; while Self-assess Your Own Strengths and Limitations (#46) was found to have a significant negative correlation. Talk to Personal Friends (#33) was the only item that was correlated significantly with the AVMI, besides these three items, for both science major students and nonscience major students.

Firmness of occupational goals. Eight of the 16 "action" items of the CDMI were correlated significantly with the AVMI on the basis of firmness of occupational goals (Table 15). For both decided students and undecided students, Choose Any Available Occupation for a Trial Period (#33) and Postpone the Decision Until Something Comes Along (#35) were found to correlate significantly with the AVMI. In addition to these 2 items, the following 5 items had a significant correlation with the AVMI only for decided students: Talk to Personal Friends (#38), Talk to Parents (#39), Talk to Class Instructor (#40), Check Resources Indicating Trends in Future Job Openings (#42), and Read Some Literature About How to Make Career Decisions (#43). For only undecided students, Get Some Information About the Occupation You Are Interested In (#44) had a negative correlation with the AVMI.

These were the results of the correlations between each item of the CDMI and the AVMI on the bases of class level, sex, major, and firmness of occupational goals.

CHAPTER V

DISCUSSION AND CONCLUSIONS

Introduction

Since counseling evolved as a helping profession, career counseling has remained one of its major concerns. In recent years, the development of theories about career choice has been a significant aspect of career counseling. A number of distinct theories about career development have been developed to understand and predict vocational behaviors.

Many of the counseling theorists have identified improving counselees' decision-making skills as a primary function of counseling and have focused on decision-making processes. Fortunately, this primary function of counseling identified by the counseling theorists is consistent with what college students want from their counselors (Graff & Maclean, 1970) and with what counseling practitioners desire to renew and update (Survey, 1977). Many decision-making models, including numerous computer-assisted guidance systems, have been developed to help students make a wise career decision.

However, very few studies have dealt with the basic factors and behaviors students may consider and exhibit when they make a career decision. What do students want from the occupation they choose? Who

influence students' career decision-making? What do students actually do when they are in the process of career decision-making?

Information concerning these questions should assist counselors, teachers, and administrators in helping students with their career decision-making.

The purpose of this study was to develop descriptive generalizations about patterns of career decision-making as related to the career maturity of university students. More specifically, this study sought to examine differences in career decision-making patterns and career maturity of university students on the bases of class level, sex, major, and firmness of occupational goals. In addition, the relationships between career decision-making patterns and career maturity of university students were explored on the bases of class level, sex, major, and firmness of occupational goals. The remainder of this chapter includes (1) summary of the results, (2) discussion, (3) conclusions, (4) implications, and (5) suggestions for further research.

Summary of the Results

Concerning firmness of occupational goals, analysis of the sample indicated that differences in the proportion of decided and undecided students existed on the bases of class level and major, but not on the basis of sex. Seniors had the highest number of decided students, and sophomores, the lowest. Science major students were more decided than

nonscience major students. However, both males and females shared almost the same proportion of decided and undecided students.

The first hypothesis concerned differences in career decision-making patterns of university students on the bases of class level, sex, major, and firmness of occupational goals. Analysis of the data indicated that 11 of the 17 "value" items showed no significant differences on the basis of class level; however, significant differences were found on 6 items. On Salary (#1) freshmen scored significantly higher than juniors and seniors. On Prestige of the Occupation (#2) and Job Security (#3), freshmen scored significantly higher than sophomores, juniors, and seniors. Sophomores had a significantly higher score than seniors on Prestige of the Occupation (#2). Juniors scored significantly higher than seniors on Your Interest in the Field (#5). On Variety of Work Duties (#7) and Independence in Duties (#8), juniors scored significantly higher than freshmen. Since only 6 of the 17 items showed significant differences, it can be concluded that there are no significant differences in values of students on the basis of class level.

On the basis of sex, a significant difference between males and females did exist on 5 of the 17 "value" items. Males scored significantly higher than females on Salary (#1) and Fringe Benefits (#15), while females had a significantly higher score than males on Your Interest in the Field (#5), Variety of Work Duties (#7), and Self-satisfaction in Job Tasks (#14). A significant difference was found on 6 items on the basis of major. Except for Working Environment (#6) and Helping Others (#9), nonscience major students

scored significantly higher than science major students on the following four items: Salary (#1), Prestige of the Occupation (#2), Potential for Advancement (#14), and Leadership (#10).

On the basis of firmness of occupational goals, 4 items differed significantly. Decided students scored significantly higher than undecided students on all of the 4 significant items: Independence in Duties (#8), Helping Others (#9), Leadership (#10), and Challenge of Work Tasks (#13).

Analysis of the data indicated that there were significant differences on 8 of the 15 "people" items on the basis of class level. Both freshmen and sophomores scored significantly higher than juniors and seniors on all of the 8 significant items, as follows: Counselor in the Psychological and Vocational Counseling Center (#20), Counselor in the Career Planning and Placement Center (#21), Department Coordinator (#24), Department Chairman (#25), Student Personnel Dean (#26), Fraternity Brothers or Sorority Sisters (#27), Resident Assistant in Residence Halls (#28), and State Employment Agent (#32).

Females scored significantly higher than males on Mother (#19) and Department Coordinator (#25). Males, however, had a higher score on Fraternity Brothers or Sorority Sisters (#27). Nonscience major students scored significantly higher than science major students on Fraternity Brothers or Sorority Sisters (#27) and Close Personal Friends (#30). Undecided students had a significantly higher score than decided students on Counselor in the Psychological and Vocational Counseling Center (#20), Counselor in the Career Planning and Placement Center (#21), and State Employment Agent (#32).

On the basis of class level, 4 of the 16 "action" items differed significantly. Freshmen and sophomores scored significantly higher than juniors and seniors on See a Counselor in the Psychological and Vocational Counseling Center (#36) and See a Counselor in the Career Planning and Placement Center (#37). On Check Resources Indicating Trends in Future Job Openings (#42), scores for freshmen were significantly higher than those of seniors. Freshmen also scored significantly higher than juniors and seniors on Take Some Tests to Assess Your Aptitudes and Interests (#47).

Females scored significantly higher than males on both Self-assess Your Own Strengths and Limitations (#46) and Review Materials in the Career Resource Center (#48). Nonscience major students scored significantly higher than science major students on Choose Any Available Occupation for a Trial Period (#33), Postpone the Decision Until Something Comes Along (#35), and See a Counselor in the Psychological and Vocational Counseling Center (#36). Science major students, however, scored higher on Visit Work Sites (#45). Undecided students had a significantly higher score than decided students on Choose Any Available Occupation for a Trial Period (#33), Postpone the Decision Until Something Comes Along (#35), See a Counselor in the Psychological and Vocational Counseling Center (#36), See a Counselor in the Career Planning and Placement Center (#37), and Review Materials in the Career Resource Center (#48).

Since less than half of the items in all sections of "values," "people," and "actions," had a significant difference, H_{01} was not rejected.

The second hypothesis concerned differences in career maturity of university students on the bases of class level, sex, major, and firmness of occupational goals. Results of the data analysis indicated that sophomore females scored lowest, while undecided seniors scored highest on the AVMI, i.e., the former had the highest level of career maturity and the latter, the lowest level. Freshmen scored highest, and seniors, lowest. Although differences in scores across class levels did exist, none was found to be statistically significant.

Females scored significantly lower than males on the AVMI, thus indicating college females had a higher level of career maturity than college males. No statistically significant differences existed between science and nonscience major students. At the same time, decided students scored significantly lower than undecided students. The mean differences increased as class level advanced, i.e., from one class level to the next, the difference in career maturity between decided and undecided students increased. There are significant differences in the career maturity of university students on the bases of sex and firmness of occupational goals, but no significant differences on the bases of class level and major. Therefore, H_{02} was partially rejected.

The third hypothesis concerned relationships between career decision-making patterns and career maturity of university students on the bases of class level, sex, major, or firmness of occupational goals. The results revealed that 29 of the 48 CDMI items correlated significantly with the AVMI. Nine of these items correlated

inversely. By the category of the CDMI for all groups, 13 of the 17 "value" items, 9 of the 15 "people" items, and 7 of the 16 "action" items correlated significantly with the AVMI.

On the basis of class level, 15 "value" items were found to correlate significantly with the AVMI. There was a significant negative correlation between the AVMI and the following 3 items of the CDMI for freshmen: Independence in Duties (#8), Opportunity to Use Your Special Talents (#11), and Challenge of Work Tasks (#13). There was a significant negative correlation between the AVMI and the CDMI on the following 4 CDMI items for sophomores: Your Interest in the Field (#5), Independence in Duties (#8), Helping Others (#9), and Challenge of Work Tasks (#13). There was no negative correlation found for juniors. There was a significant negative correlation between the AVMI and 8 items of the CDMI for seniors as follows: Your Interest in the Field (#5), Variety of Work Duties (#7), Independence in Duties (#8), Leadership (#10), Challenge of Work Tasks (#13), Self-satisfaction in Job Tasks (#14), Opportunity to Use Your Creative Ideas (#16), and Opportunity for Intellectual Stimulation (#17). The higher their level of career maturity, the more likely students were to choose these items.

For both males and females, the following 6 CDMI items had a negative correlation with the AVMI: Your Interest in the Field (#5), Independence in Duties (#8), Helping Others (#9), Opportunity to Use Your Special Talents (#11), Challenge of Work Tasks (#14), and Opportunity to Use Your Creative Ideas (#16). Two more items of the CDMI, Variety of Work Duties (#7) and Opportunity for Intellectual

Stimulation (#17), had a significant negative correlation with the AVMI for females. The higher the level of career maturity, the more likely students tended to score high on these items.

There was a significant negative correlation between the CDMI and the AVMI for science major students on 9 of the CDMI items: Your Interest in the Field (#5), Independence in Duties (#8), Challenge of Work Tasks (#13), Working Environment (#6), Helping Others (#9), Opportunity to Use Your Special Talents (#11), Self-satisfaction in Job Tasks (#14), Opportunity to Use Your Creative Ideas (#16), and Opportunity for Intellectual Stimulation (#17). For nonscience major students, the AVMI had a significant negative correlation with 4 items of the CDMI: Your Interest in the Field (#5), Independence in Duties (#8), Challenge of Work Tasks (#13), and Variety of Work Duties (#7). The higher the level of career maturity, the more likely students were to consider these items in their career decision-making process.

For both decided and undecided students, there was a significant negative correlation on 5 of the CDMI items: Your Interest in the Field (#5), Independence in Duties (#8), Opportunity to Use Your Special Talents (#11), Challenge of Work Tasks (#13), and Opportunity for Intellectual Stimulation (#17). On Helping Others (#9) and Opportunity to Use Your Special Talents (#11), a significant negative correlation was found for only science major students. Since over 13 of the 17 "value" items of the CDMI correlated significantly with the AVMI, a significant correlation did exist between "value" items of the CDMI and the AVMI, i.e., values correlate significantly with career maturity.

There was a significant positive correlation between the CDMI and AVMI on 11 of the 15 "people" items on the basis of class level. On the basis of sex, there was a significant positive correlation between the CDMI and the AVMI on 12 of the 15 "people" items. Ten of the 15 "people" items of the CDMI correlated significantly with the AVMI on the basis of major; no negative correlation was found. On the basis of firmness of occupational goals, only a positive correlation was found between 6 of the 15 "people" items of the CDMI and the AVMI. Since almost two-thirds of the CDMI items correlated significantly with the AVMI, it can be said that a significant relationship exists between the influential people element of career decision-making patterns and career maturity.

Seven of the 16 "action" items of the CDMI correlated significantly with the AVMI on the basis of class level. On the bases of sex and major, 9 "action" items correlated significantly with the AVMI, and 8 "action" items correlated significantly on the basis of firmness of occupational goals. A significant negative correlation existed between the CDMI and the AVMI for undecided students on Get Some Information About the Occupation You Are Interested In (#44). Since little more than half of the "action" items had a significant correlation with the AVMI, the result does not support a strong relationship between the action element of career decision-making patterns and career maturity.

Value and people elements of career decision-making patterns were correlated significantly with the AVMI on the bases of class level, sex, major, and firmness of occupational goals. However, the action

element was not found to correlate significantly with the AVMI. Therefore, H_{O3} was partially rejected.

Discussion

This study proposed to develop descriptive generalizations about career decision-making patterns of university students as related to career maturity. In order to do so, differences in career decision-making patterns and career maturity, as well as the relationship between career decision-making patterns and career maturity of university students, were examined.

In general, the results of this study indicate that university students are a relatively homogeneous group in terms of career decision-making patterns and career maturity on the bases of class level, sex, major, and firmness of occupational goals. Although some differences did exist among groups, few of these differences were found to be statistically significant.

A description of the sample revealed an interesting characteristic about the number of decided students on the basis of class level, i.e., as the class level advanced, the number of decided students in the class level also increased. However, surprisingly, freshmen included more decided students than did sophomores. This phenomenon can be explained by "Pseudocrystallization" (Ginzberg, et al., 1951). When students graduate from high school and enter college, they often have career goals based on limited knowledge of themselves and the world of work. After they spend a year in college, students

understand themselves and society better, and become more realistic about their career goals. As a matter of fact, the sophomore year is the period in which students compare their previously decided career goals with the new, more realistic ones. This is a period of struggle. As a consequence, sophomores reconsider their previous career goals, leave their career options open, and become undecided about their careers. This phenomenon may explain the result of this study, that sophomores had the lowest number of decided students among the four class levels.

The results of this study indicate high similarity existed for all groups in the ranking of values. All groups ranked Your Interest in the Field (#5) and Self-satisfaction in Job Tasks (#14) first and second, and Prestige of the Occupation (#2) last. This result supports the findings of Anderson and Bosworth (1971) who reported a consistency in ranking of values with interest in work first.

Freshmen scored higher than sophomores, juniors, or seniors on Salary (#1), Prestige of Occupation (#2), and Job Security (#3), which indicates attention to extrinsic rewards and a low level of career maturity. On the basis of sex, a few significant differences in values were found. Males scored higher than females on Salary (#1) and Fringe Benefits (#15), and females scored higher than males on Your Interest in the Field (#5), Variety of Work Duties (#7), and Self-satisfaction in Job Tasks (#14). Gribbons and Lohnes (1965) and Wagman (1966) found the same result for males; Wolfe (1969) and Thomas (1974) discovered that females appeared to value the extrinsic rewards of work less than did males. The findings of these earlier studies

are consistent with the findings of this study. As the career maturity scores indicate, females appear to be more mature than males concerning their values. Science major students and decided students placed intrinsic values higher than nonscience major students and undecided students, respectively. Although all groups of students ranked values similarly, a definite pattern based on intrinsic or extrinsic rewards and level of career maturity appeared for values. This pattern indicated significant differences by class level, sex, major, and firmness of occupational goals.

Students in all groups also showed a remarkable consistency in ranking people who would influence them. They ranked Person Working in Your Chosen Occupation (#31), Father (#18), and Mother (#19), first, second, and third; Resident Assistant in Residence Halls (#28) and Student Personnel Dean (#26) last. This finding is not consistent with the result of a study performed by Kerr (1962) with high school students. Those students ranked influential people as follows: parents, counselors, teachers, relatives, friends, self, and college representatives. In this study, however, counselor ranked only in the middle of the order.

An interesting finding is that the lower the class level the higher the scores on each of the "people" items, i.e., the lower the class level the more students want to talk to someone about their career decision-making. In contrast, as class level advances, the score on each "people" item decreases. This characteristic becomes apparent when freshmen and sophomores score significantly higher than juniors and seniors on 8 of the 15 "people" items. The finding may

imply that upper class level students either have made their career decision already, think they are capable of making career decisions without receiving help from other people, or are familiar with all the sources of information.

Both males and females scored higher on Father (#18) than on Mother (#19); however, females scored higher on Mother (#19) than did males. This finding indicates that the father is a more influential person than mother for both males and females; however, mother is influential only for females in their career decision-making. Nonscience major students try to get help from nonprofessional people, such as close personal friends, rather than from helping professionals; while undecided students seek help from professionals, such as counselors in the counseling center or career planning and placement center, and state employment agents.

As indicated above, students generally tend to seek help from a particular individual for their career decision-making. Some different patterns appear by class level, sex, major, and firmness of occupational goals.

Students of all groups showed a similar rank order in actions they would take. The top 5 action items they ranked were Talk to a Person Working in the Occupation You Are Interested In (#41), Get Some Information About the Occupation You Are Interested in (#44), Self-assess Your Own Strengths and Limitations (#46), Visit Work Sites (#45), and Check Resources Indicating Trends in Future Job Openings (#42). Since these items are related to information getting activities, it can be inferred that university students try to get

information about jobs when they are in the process of career decision-making. Choose Any Available Occupation for a Trial Period (#33) and See a Counselor in the Psychological and Vocational Counseling Center (#36) were at the bottom of the ranking.

As indicated in the people element, freshmen and sophomores scored higher than juniors and seniors on information gathering activities such as seeing a counselor and checking resources about job openings. This result seems to imply that they are less certain than upper class level students about their occupational goals and job information; thus, they tend to take an action to get necessary information. Although sex difference was not significant, females had a slightly greater tendency to get information about themselves and occupations.

There are some interesting differences detected between science major students and nonscience major students. While the former tended to take information-getting actions, such as Visit Work Sites (#45), the latter group showed rather emotional behavior such as Choose Any Available Occupation for a Trial Period (#33), Postpone the Decision Until Something Comes Along (#35), and See a Counselor in the Career Planning and Placement Center (#37). Since sciences tend to be a more vocationally oriented major than nonsciences, science major students seemed to be more certain than nonscience major students about their career goals. Visiting the work site is a much more advanced action step than choosing any occupation or postponing the decision.

Decided and undecided students showed almost the same differences as did science and nonscience major students. Undecided students tend

to take more emotional, people-seeking, and information-getting actions than do decided students.

As found in the previous cases of values and people, students of all groups showed a very similar tendency in taking an action; however, they also showed some significantly different patterns by class level, sex, major, and firmness of occupational goals.

Although there was no significant difference in career maturity of university students on the basis of class level, there was a tendency for the level of career maturity to increase with advanced class levels. However, one exception was found in the case of sophomores. Sophomores were the second highest group, right next to seniors, in level of career maturity, even though sophomores had the highest number of undecided students. The sophomore year may be the period of thinking about and reconsidering careers, and this may make sophomores more mature in the area of career.

Another interesting finding was the significant difference between males and females in career maturity. In this study, females showed significantly higher career maturity than did males. This result is in conflict with other previous studies (Crites, 1965; Loesch, Shub, & Rucker, 1977; Mathewson & Orton, 1963; Super, 1972; Walls & Gulkus, 1974b) which found no significant sex differences. However, this finding supports some of the research by Davis, Hagan, and Strouf (1962), Smith and Herr (1972), and Crane (1977). According to Crane (1977), the women's movement in recent years has helped college women be "more certain and knowledgeable about their own personal vocational choice processes" (p. 95).

Major field of study does not seem to be a significant factor in career maturity; however, firmness of occupational goals seems to be a significant indicator of career maturity. Decided students are significantly more mature regarding career than are undecided students. Furthermore, an interesting finding is that the difference in mean scores between decided and undecided students increases as the class level advances. This situation can be explained on the basis that as the class level advances, students are supposed to be, and tend to be, more decided about their occupational goals. Therefore, staying undecided is more common for lower class level students but uncommon for upper class level students. In other words, there is not much difference in career maturity between decided and undecided students at the lower class levels, but a much greater difference between these two groups at the upper class levels.

Since 29 of the 43 CDMI items correlated significantly with the AVMI, there seems to be a close relationship between career decision-making patterns and career maturity. These 29 items consist of 13 value items, 9 people items, and 7 action items. Values seem to be more related to career maturity than do people or action.

A low level of career maturity has a significant correlation with extrinsic values such as salary, prestige of the occupation, leisure, and fringe benefits. However, a high level of career maturity correlates significantly with rather intrinsic values such as interest, variety of work, independence, helping others, using special talents, and intellectual stimulation. This result is consistent with

all groups by class level, sex, major, and firmness of occupational goals.

Furthermore, the more intrinsic values that have a significant correlation with career maturity are found in a group with a higher level of career maturity. This finding indicates a close relationship between particular values and level of career maturity.

Students with lower levels of career maturity are more likely to be influenced by parents, counselors, department chairpersons, student personnel workers, fraternity brothers or sorority sisters, roommates, close friends, or state employment agents. Less mature students tend to seek help from a variety of people. Students with lower career maturity are more likely to choose any occupation, postpone the decision, see a counselor, talk to friends and parents, and read some literature about career decision-making. For all groups, less mature students tend to show more emotional behavior than getting information about occupation or self-assessment.

In general, a significant correlation exists between career decision-making and career maturity, and the correlation seems to be consistent with all groups.

Conclusions

The results of this study lead to the following conclusions:

1. In general, university students are a relatively homogeneous group in terms of career decision-making patterns and career maturity. At the same time, some differences exist in terms

of class level, sex, major, and firmness of occupational goals.

2. In terms of the firmness of occupational goals, university students show a developmental trend. As the class level advances, the number of students who have decided about their occupational goals increases.
3. Although general career decision-making patterns are similar for each group, some significantly different patterns exist on the bases of class level, sex, major, and firmness of occupational goals. Students had a significantly different score on different items.

In the area of values, for example, freshmen and sophomores scored higher than did juniors and seniors on salary, prestige of the occupation, and job security; while juniors and seniors scored higher on interest in the field, variety of work duties, and independence. Males had a higher score than did females on salary and fringe benefits, while females had a higher score on interest in the field, variety of work duties, and self-satisfaction. Working environment and helping others were more valued by science major students; while salary, prestige of the occupation, advancement, and leadership were regarded more important by nonscience major students. Decided students had a higher score than did undecided students on independence, helping others, leadership, and challenge.

In the area of people, for example, freshmen and sophomores had a higher score than did juniors and seniors on counselors, department coordinator, department chairman, student personnel dean, fraternity brothers or sorority sisters, resident assistant, and state employment agent. Females scored higher on mother and department coordinator, while males scored higher on fraternity brothers or sorority sisters. Nonscience major students showed a higher score on fraternity brothers or sorority sisters and friends. Undecided students regarded counselors and state employment agent as more influential than did decided students.

In the area of action, for example, freshmen and sophomores were more likely to see a counselor, check resources indicating job openings, and take tests than were juniors and seniors. Females tended to self-assess and review materials concerning career choice more than did males. Nonscience major students were more likely to choose any occupation for a trial period, postpone the decision, and see a counselor, while science major students tended to visit work sites. Undecided students were more likely to choose any occupation for a trial period, postpone the decision, see a counselor, and review materials concerning career choice, than were decided students.

4. Class level and major were the most significantly differentiating variables for students' values and people of influence, while firmness of occupational goals was the most significantly

differentiating variable for action taken. Over all, class level is the most significantly differentiating variable followed by firmness of occupational goals, sex, and major.

5. Significantly different levels of career maturity existed on the bases of sex and firmness of occupational goals. University females have a higher level of career maturity than males. This result is contrary to some of the previous research, which indicates no differences on the basis of sex. Decided students tend to have a higher level of career maturity than undecided students. Even though the result is not significant, the level of career maturity tends to increase as the class level advances. Moreover, although there is not much difference in career maturity of decided and undecided students at the lower class levels, greater differences are apparent at the upper class levels.
6. In general, there is a relationship between career decision-making patterns and career maturity of university students on the bases of class level, sex, major, and firmness of occupational goals. As the level of career maturity increases, students tend to place more importance on intrinsic values, be less influenced by other people, and take actions related to information gathering and self-assessment. On the contrary, as the level of career maturity decreases, students tend to place more importance on extrinsic values, be more influenced by other people, and take actions related to emotional and people-seeking behaviors.

Implications

The results of this study suggest the following five implications:

First, most of the career decision-making theories or models focus on value judgment and deal with some specific value items. However, the use of some of the value items is questionable. As the results of this study show, when students placed their values in rank order, the seven values which they ranked as least important were variety, salary, helping others, leadership, leisure, fringe benefits, and prestige of the occupation. Ironically, these value items are the ones used most frequently in career decision-making models. Therefore, there should be more careful consideration in selecting value items, so that these selected values could include more possibilities from which students might choose.

Second, people who influence students' career decision-making most are persons working in the occupation of students' interest, parents, and friends, followed by class instructors, academic advisors, and department chairmen. The counselor in the placement center is just in the middle of the rank order, and the counselor in the counseling center is in the bottom third. A few things should be clarified regarding this phenomenon. First of all, the counselor's role is too limited in influencing students' career decision-making. Counselors should be more active and find ways to be more influential in this area. Next, since students are more influenced by persons working in the occupation of the students' interest, parents, class instructors, and academic department faculty members, these people should be helped

to realize that they are influencing students' career decision-making and to gain a better understanding of the necessary knowledge and skills to help students. However, since these people are not experts in counseling, they might be advised about various referral services and the availability of professional counselors. Since persons working in the occupation of the student's interest are the most influential persons, they should be involved in organized programs, such as career days, to increase their accessibility to students.

Third, since students require more information about career planning and occupations when they are in the process of career decision-making, more organized information services should be available to them.

Fourth, when students need help in career decision-making, they are more likely to see a counselor in the placement center than a counselor in the counseling center. As a matter of fact, seeing a counselor in the counseling center is the least likely possibility. Therefore, career counseling services should be concentrated in the placement center or, perhaps, counseling centers and placement centers might be combined.

Fifth, the above indications lead to a significant implication for both counselor education and counseling practice. Counselors need to emphasize the various factors underlying the career decision-making process as a means of maximizing their assistance.

Suggestions for Further Research

There are several implications for further research. A replication of the present study should be done at other colleges and universities to determine whether or not similar results can be obtained with different populations.

It is suggested that additional studies be carried out to give further support to the use of the CDMI and the AVMI. It is noted that no other study has been performed to support the validity and reliability of the CDMI. Also, even though the AVMI is validated, only a few studies support its validity, and the AVMI measures only attitudinal factors in the career maturity construct. This study should also be replicated using other instruments in order to further support or refute the patterns found in this study.

Based on the CDMI, one could develop a more comprehensive and systematic instrument measuring career decision-making processes. This new instrument could use a different format or different criteria.

Research dealing with the underlying rationale of students' decision-making behavior should be performed. The present study concerned only the factors that students consider, but did not deal with why a particular student chooses a specific factor. This underlying rationale of decision-making behavior should be examined more fully.

Since this study deals with only the process of career decision-making, the actual outcome of the decision-making is not known.

Therefore, a further study should be performed to explore actual outcomes.

Further research could be performed based on different criterion variables such as personality, interest, socio-economic background, grade point average, and change of major.

A follow-up, longitudinal study should be done to find out whether decision-making patterns and level of career maturity change over time.

Further research could be performed to determine the relationship between career decision-making patterns and the level of job satisfaction students gain and maintain after graduation.

The findings of this study indicate that university students are a relatively homogeneous group in terms of career decision-making patterns and career maturity. At the same time, some differences exist on the bases of class level, sex, major, and firmness of occupational goals.

APPENDIX A
CAREER DECISION-MAKING INVENTORY

Name _____ #I.D. _____ Date _____

Sex: Male _____ Female _____ Age _____

Class Level: Freshman _____ Sophomore _____ Junior _____ Senior _____

Major _____ If undecided, tentative major _____

Have you decided on an occupational goal? Yes _____ No _____

If yes, what occupation did you choose? _____

The following items are factors you may consider when you make a career decision. Please circle the number (1 through 5) that most accurately represents how much that factor would influence your decision.

I. How important is each of the following in influencing any career decision you might make:

	Not Important					Very Important				
1. Salary	1	2	3	4	5					
2. Prestige of the occupation	1	2	3	4	5					
3. Job security	1	2	3	4	5					
4. Potential for advancement	1	2	3	4	5					
5. Your interest in the field	1	2	3	4	5					
6. Working environment (physical)	1	2	3	4	5					
7. Variety of work duties	1	2	3	4	5					
8. Independence in duties	1	2	3	4	5					
9. Helping others (altruism)	1	2	3	4	5					

10. Leadership (including supervisory responsibilities)	1	2	3	4	5
11. Opportunity to use your special talents	1	2	3	4	5
12. Leisure (flexible work schedule)	1	2	3	4	5
13. Challenge of work tasks	1	2	3	4	5
14. Self-satisfaction in job tasks	1	2	3	4	5
15. Fringe benefits	1	2	3	4	5
16. Opportunity to use your creative ideas	1	2	3	4	5
17. Opportunity for intellectual stimulation	1	2	3	4	5

II. When you make a career decision, how influential would each of the following people be:

	Not Influential			Very Influential	
18. Father	1	2	3	4	5
19. Mother	1	2	3	4	5
20. Counselor in the Psychological and Vocational Counseling Center	1	2	3	4	5
21. Counselor in the Career Planning and Placement Center	1	2	3	4	5
22. Class instructor	1	2	3	4	5
23. Academic advisor	1	2	3	4	5
24. Department coordinator	1	2	3	4	5
25. Department chairman	1	2	3	4	5
26. Student personnel dean in Tigert Hall	1	2	3	4	5
27. Fraternity brothers or sorority sisters	1	2	3	4	5
28. Resident assistant in residence halls	1	2	3	4	5
29. Roommate	1	2	3	4	5
30. Close personal friends	1	2	3	4	5

31. Person working in your chosen occupation	1	2	3	4	5
32. State employment agent	1	2	3	4	5

III. If you were asked to make a career decision next week, how likely would you be to do the following:

	Not Likely				Very Likely
33. Choose any available occupation for a trial period	1	2	3	4	5
34. Follow your own intuition	1	2	3	4	5
35. Postpone the decision until something comes along	1	2	3	4	5
36. See a counselor in the Psychological and Vocational Counseling Center	1	2	3	4	5
37. See a counselor in the Career Planning and Placement Center	1	2	3	4	5
38. Talk to personal friends	1	2	3	4	5
39. Talk to parents	1	2	3	4	5
40. Talk to class instructors	1	2	3	4	5
41. Talk to a person working in the occupation you are interested in	1	2	3	4	5
42. Check resources indicating trends in future job openings	1	2	3	4	5
43. Read some literature about how to make career decisions	1	2	3	4	5
44. Get some information about the occupation you are interested in	1	2	3	4	5
45. Visit work sites	1	2	3	4	5
46. Self-assess your own strengths and limitations	1	2	3	4	5
47. Take some tests to assess your aptitudes and interests	1	2	3	4	5
48. Review materials in the Career Resource Center	1	2	3	4	5

APPENDIX B
AVMI OPINION SURVEY

Name _____

DIRECTIONS: Please read each of the following statements about choosing a job and decide the extent to which you agree or disagree. Draw a circle around the number to the right of each statement which most nearly represents your opinion. The numbers represent the following opinions:

- 1 - if you strongly disagree with the statement
- 2 - if you disagree but not strongly
- 3 - if you are neutral or undecided
- 4 - if you agree but not strongly
- 5 - if you strongly agree with the statement

Work rapidly and record your first impression. Remember, the only correct answer is the one which most nearly represents your attitude toward the vocational statement.

- | | | | | | |
|--|---|---|---|---|---|
| 1. You have to know what you are good at, and what you are poor at, before you can choose an occupation. | 1 | 2 | 3 | 4 | 5 |
| 2. Once a person makes an occupational choice he can't make another one. | 1 | 2 | 3 | 4 | 5 |
| 3. A person can do anything he wants as long as he tries hard. | 1 | 2 | 3 | 4 | 5 |
| 4. Your occupation is important because it determines how much you can earn. | 1 | 2 | 3 | 4 | 5 |
| 5. A consideration of what you are good at is more important than what you like in choosing an occupation. | 1 | 2 | 3 | 4 | 5 |
| 6. Parents probably know better than anybody which occupation a person should enter. | 1 | 2 | 3 | 4 | 5 |
| 7. Work is worthwhile mainly because it lets you buy things you want. | 1 | 2 | 3 | 4 | 5 |
| 8. Work is drudgery. | 1 | 2 | 3 | 4 | 5 |
| 9. Why should a person try to decide upon an occupation when the future is so uncertain. | 1 | 2 | 3 | 4 | 5 |

- | | | | | | |
|--|---|---|---|---|---|
| 10. It's probably just as easy to be successful in one occupation as it is in another. | 1 | 2 | 3 | 4 | 5 |
| 11. By the time a person is 15, he should have his mind pretty well made up about the occupation he intends to enter. | 1 | 2 | 3 | 4 | 5 |
| 12. Sometimes you can't get into the occupation you want to enter. | 1 | 2 | 3 | 4 | 5 |
| 13. You can't go very far wrong by following your parent's advice about which occupation to enter. | 1 | 2 | 3 | 4 | 5 |
| 14. Working an occupation is much like going to school. | 1 | 2 | 3 | 4 | 5 |
| 15. The best thing to do is to try out several occupations, and then choose the one you like best. | 1 | 2 | 3 | 4 | 5 |
| 16. There is only one occupation for each individual. | 1 | 2 | 3 | 4 | 5 |
| 17. Whether you are interested in an occupation is not as important as whether you can do the work. | 1 | 2 | 3 | 4 | 5 |
| 18. You get into an occupation mostly by chance. | 1 | 2 | 3 | 4 | 5 |
| 19. It's who you know, not what you know, that's important in an occupation. | 1 | 2 | 3 | 4 | 5 |
| 20. A person should choose an occupation in which he can someday become famous. | 1 | 2 | 3 | 4 | 5 |
| 21. If someone has some doubts about what he wants to do, he should ask his parents or friends for advice and suggestions. | 1 | 2 | 3 | 4 | 5 |
| 22. Choose an occupation which allows you to do what you believe in. | 1 | 2 | 3 | 4 | 5 |
| 23. It doesn't matter which occupation a person chooses as long as it pays well. | 1 | 2 | 3 | 4 | 5 |
| 24. As far as choosing an occupation is concerned, something always comes along sooner or later. | 1 | 2 | 3 | 4 | 5 |
| 25. Why worry about choosing an occupation when a person doesn't have anything to say about it anyway. | 1 | 2 | 3 | 4 | 5 |
| 26. I really can't find any occupation that has much appeal to me. | 1 | 2 | 3 | 4 | 5 |
| 27. I had little or no idea of what working would be like. | 1 | 2 | 3 | 4 | 5 |
| 28. As long as I can remember I've known what I wanted to do. | 1 | 2 | 3 | 4 | 5 |

- | | | | | | |
|--|---|---|---|---|---|
| 29. I can't understand how some people could be so set about what they wanted to do. | 1 | 2 | 3 | 4 | 5 |
| 30. My ideal occupation would have to be one which has short hours and nice working conditions. | 1 | 2 | 3 | 4 | 5 |
| 31. I wanted an occupation which paid good money. | 1 | 2 | 3 | 4 | 5 |
| 32. I often wondered how successful I would be in my occupation. | 1 | 2 | 3 | 4 | 5 |
| 33. I know very little about the requirements of occupations. | 1 | 2 | 3 | 4 | 5 |
| 34. I spent a lot of time wishing I could do work that I know I cannot ever possibly do. | 1 | 2 | 3 | 4 | 5 |
| 35. I guess everybody goes to work sooner or later, but I didn't look forward to it. | 1 | 2 | 3 | 4 | 5 |
| 36. I often daydreamed about what I wanted to be, but I really didn't have an occupational choice. | 1 | 2 | 3 | 4 | 5 |
| 37. The greatest appeal of an occupation to me is the opportunity it provides for getting ahead. | 1 | 2 | 3 | 4 | 5 |
| 38. Everyone told me something different, until I didn't know which occupation to choose. | 1 | 2 | 3 | 4 | 5 |
| 39. I seldom thought about the occupation I wanted to enter. | 1 | 2 | 3 | 4 | 5 |
| 40. I didn't think much about the kind of job I wanted. | 1 | 2 | 3 | 4 | 5 |

APPENDIX C

COVER LETTER

Dear Student:

I am a doctoral student in the Counselor Education Department. I am studying career decision-making patterns among university students. My study is trying to answer the following questions: How do you make a career decision? What factors do you consider in career decision-making?

My purpose is to gather some information about what university students actually do and consider when they make a career decision. If we have more accurate information about the career decision-making process, it should be helpful for counselors, instructors, and especially students.

Your participation is voluntary and your responses will be kept completely confidential. If you are willing to participate, please sign the form below. If you are interested in the results of the study and your own individual scores, please write your name, ID number, and your mailing address in the space below.

The process of answering the questions is self-explanatory. However, whenever you have a question, please feel free to ask me. Thank you very much for your participation.

Sincerely,

Jae C. Lee
Doctoral Candidate
Dept. of Counselor Education
University of Florida

RELEASE FORM:

I understand that participation in this study is completely voluntary and my decision to participate and my personal scores will have no effect upon my grades or academic standing.

Your signature

REPORT FOR RESULTS OF THE STUDY:

I am interested in the results of this study and wish to know my own individual scores. Please mail these to me at the address below.

Name

ID number

Address

APPENDIX D
STATISTICAL TABLES

Table 8

Career Decision-Making Inventory Scale Means and
Standard Deviations Broken Down by Class Level,
Sex, Major and Firmness of Occupational Goal

Item Class Level	Sex		Major		Firmness of Occupational Goals		Total	
	Male	Female	Science	Nonscience	Decided	Undecided		
1. <u>Salary</u>								
Freshmen	\bar{X}	4.11	3.88	3.94	4.06	4.06	3.89	4.00
	SD	0.75	0.80	0.82	0.74	0.77	0.80	0.78
Sophomores	\bar{X}	3.95	3.73	3.73	3.91	3.85	3.84	3.85
	SD	0.91	0.79	0.76	0.91	0.97	0.76	0.86
Juniors	\bar{X}	3.72	3.62	3.49	3.83	3.61	3.88	3.68
	SD	0.94	0.80	0.83	0.92	0.94	0.76	0.89
Seniors	\bar{X}	3.77	3.54	3.65	3.76	3.75	3.53	3.70
	SD	0.82	0.80	0.89	0.71	0.83	0.80	0.82
All Levels	\bar{X}	3.85	3.70	3.69	3.88	3.79	3.79	3.79
	SD	0.87	0.80	0.85	0.83	0.88	0.78	0.85
2. <u>Prestige of the Occupation</u>								
Freshmen	\bar{X}	3.55	3.57	3.32	3.62	3.42	3.54	3.47
	SD	0.90	0.96	0.96	0.88	0.92	0.96	0.93
Sophomores	\bar{X}	3.25	3.02	2.82	3.32	3.33	2.98	3.15
	SD	1.14	0.95	1.07	1.03	1.08	1.03	1.06
Juniors	\bar{X}	3.23	3.36	3.02	3.47	3.25	3.33	3.27
	SD	1.11	1.01	1.12	1.00	1.13	0.92	1.07
Seniors	\bar{X}	3.34	3.30	3.21	3.50	3.37	3.22	3.33
	SD	0.98	0.85	1.01	0.80	0.95	0.89	0.94
All Levels	\bar{X}	3.34	3.28	3.14	3.47	3.34	3.26	3.31
	SD	1.03	0.95	1.04	0.94	1.01	0.97	1.00

Table 8 (continued)

Item	Sex			Major		Firmness of Occupational Goal		Total
Class Level	Male	Female	Science	Nonscience	Decided	Undecided		
3. <u>Job Security</u>								
Freshmen	\bar{X}	4.28	4.27	4.22	4.32	4.23	4.35	4.27
	SD	0.88	0.80	0.89	0.78	0.86	0.79	0.84
Sophomores	\bar{X}	3.96	4.23	4.06	4.09	4.17	4.00	4.08
	SD	0.88	0.74	0.93	0.78	0.83	0.82	0.83
Juniors	\bar{X}	4.03	4.11	4.05	4.06	4.06	4.05	4.06
	SD	0.84	1.01	0.80	0.97	0.92	0.85	0.90
Seniors	\bar{X}	4.01	4.21	4.11	4.03	4.11	3.95	4.08
	SD	0.84	0.64	0.83	0.72	0.76	0.84	0.78
All Levels	\bar{X}	4.06	4.21	4.12	4.12	4.13	4.09	4.12
	SD	0.86	0.80	0.85	0.83	0.84	0.83	0.84
4. <u>Potential for Advancement</u>								
Freshmen	\bar{X}	4.32	4.30	4.17	4.45	4.37	4.22	4.31
	SD	0.77	0.91	0.94	0.69	0.79	0.92	0.84
Sophomores	\bar{X}	4.35	4.09	3.97	4.36	4.25	4.22	4.23
	SD	0.84	0.74	0.77	0.80	0.84	0.78	0.81
Juniors	\bar{X}	4.15	4.26	4.20	4.17	4.12	4.35	4.18
	SD	0.99	0.82	0.93	0.95	1.05	0.53	0.93
Seniors	\bar{X}	4.32	4.33	4.27	4.40	4.30	4.39	4.32
	SD	0.87	0.68	0.84	0.78	0.85	0.68	0.81
All Levels	\bar{X}	4.27	4.25	4.19	4.34	4.26	4.29	4.27
	SD	0.88	0.80	0.88	0.82	0.90	0.75	0.85

Table 8 (continued)

Item	Sex			Major		Firmness of Occupational Goal		Total
Class Level	Male	Female	Science	Nonscience	Decided	Undecided		
5. <u>Interest in the Field</u>								
Freshmen	\bar{X}	4.65	4.73	4.71	4.66	4.68	4.70	4.69
	SD	0.76	0.61	0.73	0.65	0.67	0.73	0.69
Sophomores	\bar{X}	4.76	4.84	4.85	4.77	4.79	4.80	4.80
	SD	0.47	0.43	0.36	0.49	0.46	0.45	0.45
Juniors	\bar{X}	4.78	4.96	4.90	4.79	4.86	4.78	4.84
	SD	0.44	0.20	0.30	0.44	0.37	0.42	0.39
Seniors	\bar{X}	4.61	4.73	4.70	4.59	4.66	4.63	4.65
	SD	0.62	0.49	0.53	0.65	0.57	0.63	0.58
All Levels	\bar{X}	4.69	4.81	4.77	4.71	4.74	4.73	4.74
	SD	0.59	0.47	0.53	0.56	0.54	0.60	0.55
6. <u>Working Environment</u>								
Freshmen	\bar{X}	3.92	4.12	4.08	3.95	4.00	4.04	4.02
	SD	0.87	0.83	0.92	0.78	0.82	0.92	0.85
Sophomores	\bar{X}	3.93	4.00	4.06	3.91	3.88	4.04	3.96
	SD	0.86	0.82	0.76	0.87	0.79	0.88	0.84
Juniors	\bar{X}	4.05	4.15	4.36	3.88	4.13	3.98	4.08
	SD	0.94	0.69	0.75	0.89	0.88	0.83	0.86
Seniors	\bar{X}	3.96	4.06	4.16	3.76	4.02	3.89	3.99
	SD	0.90	0.86	0.74	1.01	0.91	0.80	0.88
All Levels	\bar{X}	3.98	4.08	4.18	3.87	4.03	3.99	4.02
	SD	0.89	0.80	0.80	0.89	0.86	0.86	0.86

Table 8 (continued)

Item	Sex			Major		Firmness of Occupational Goal		Total
Class Level	Male	Female	Science	Nonscience	Decided	Undecided		
7. <u>Variety of Work Duties</u>								
Freshmen	\bar{X}	3.58	3.95	3.68	3.84	3.87	3.57	3.76
	SD	0.92	0.87	1.00	0.81	0.90	0.91	0.91
Sophomores	\bar{X}	3.76	4.09	4.00	3.86	3.81	4.00	3.91
	SD	0.84	0.80	0.75	0.88	0.89	0.77	0.83
Juniors	\bar{X}	3.96	4.15	4.25	3.86	4.11	3.83	4.03
	SD	0.94	0.96	0.81	1.01	0.92	0.98	0.94
Seniors	\bar{X}	3.83	4.06	4.04	3.72	3.97	3.71	3.91
	SD	0.94	0.73	0.74	1.02	0.90	0.80	0.88
All Levels	\bar{X}	3.81	4.05	4.00	3.82	3.97	3.78	3.91
	SD	0.92	0.84	0.85	0.94	0.91	0.88	0.90
8. <u>Independence of Duties</u>								
Freshmen	\bar{X}	3.75	4.07	3.75	4.06	4.03	3.70	3.90
	SD	0.98	1.01	1.15	0.81	0.99	1.01	1.00
Sophomores	\bar{X}	4.07	4.00	3.97	4.08	4.21	3.89	4.04
	SD	0.94	0.78	0.92	0.85	0.80	0.91	0.87
Juniors	\bar{X}	4.17	4.26	4.30	4.12	4.24	4.10	4.20
	SD	0.85	0.74	0.83	0.80	0.84	0.74	0.81
Seniors	\bar{X}	4.02	4.10	4.11	3.96	4.06	4.00	4.04
	SD	0.93	0.80	0.85	0.94	0.89	0.90	0.89
All Levels	\bar{X}	4.02	4.10	4.04	4.06	4.12	3.91	4.05
	SD	0.93	0.85	0.96	0.85	0.89	0.91	0.90

Table 8 (continued)

Item Class Level	Sex			Major		Firmness of Occupational Goal		Total
	Male	Female		Science	Nonscience	Decided	Undecided	
9. <u>Helping Others (altruism)</u>								
Freshmen	\bar{X}	3.54	4.00	3.84	3.68	3.94	3.46	3.76
	SD	1.03	1.21	1.11	1.17	1.12	1.11	1.14
Sophomores	\bar{X}	3.71	3.98	4.09	3.70	3.92	3.75	3.83
	SD	0.93	1.04	0.80	1.05	1.01	0.98	0.99
Juniors	\bar{X}	3.69	3.83	3.90	3.62	3.88	3.38	3.74
	SD	0.97	0.89	0.94	0.93	0.94	0.87	0.94
Seniors	\bar{X}	3.77	3.60	3.86	3.51	3.76	3.58	3.71
	SD	1.02	0.85	0.92	1.00	0.96	0.98	0.96
All Levels	\bar{X}	3.69	3.85	3.90	3.62	3.86	3.55	3.75
	SD	0.99	1.02	0.96	1.03	1.00	0.99	1.01
10. <u>Leadership (including supervisory responsibility)</u>								
Freshmen	\bar{X}	3.62	3.88	3.49	4.00	3.92	3.43	3.74
	SD	1.00	1.11	1.06	0.99	1.02	1.05	1.05
Sophomores	\bar{X}	3.80	3.61	3.33	3.91	3.88	3.57	3.72
	SD	1.03	1.06	0.92	1.05	1.02	1.04	1.04
Juniors	\bar{X}	3.82	3.77	3.72	3.86	3.84	3.81	3.80
	SD	1.02	0.84	0.97	0.96	0.99	0.89	0.96
Seniors	\bar{X}	3.69	3.77	3.62	3.84	3.81	3.39	3.71
	SD	1.06	0.94	1.06	0.96	0.95	1.18	1.02
All Levels	\bar{X}	3.73	3.77	3.58	3.90	3.86	3.51	3.75
	SD	1.03	1.00	1.02	0.98	0.98	1.04	1.02

Table 8 (continued)

Item		Sex		Major		Firmness of Occupational Goal		Total
Class Level		Male	Female	Science	Nonscience	Decided	Undecided	
11. <u>Opportunity to Use Your Special Talents</u>								
Freshmen	\bar{X}	4.15	4.33	4.25	4.23	4.33	4.09	4.24
	SD	0.81	0.90	0.90	0.82	0.80	0.94	0.86
Sophomore	\bar{X}	4.51	4.16	4.48	4.29	4.29	4.41	4.35
	SD	0.74	0.83	0.71	0.84	0.74	0.85	0.80
Juniors	\bar{X}	4.31	4.40	4.38	4.31	4.41	4.18	4.34
	SD	0.83	0.90	0.85	0.86	0.87	0.78	0.85
Seniors	\bar{X}	4.29	4.37	4.29	4.35	4.37	4.13	4.32
	SD	0.84	0.69	0.79	0.81	0.73	0.96	0.79
All Levels	\bar{X}	4.31	4.32	4.33	4.30	4.36	4.21	4.31
	SD	0.82	0.83	0.82	0.83	0.79	0.89	0.82
12. <u>Leisure</u> (flexible work schedule)								
Freshmen	\bar{X}	3.77	3.57	3.65	3.69	3.59	3.80	3.67
	SD	0.95	0.98	0.94	1.00	0.95	0.98	0.97
Sophomores	\bar{X}	3.85	3.41	3.64	3.67	3.48	3.82	3.66
	SD	1.13	1.02	0.99	1.15	1.17	1.01	1.10
Juniors	\bar{X}	3.57	3.57	3.54	3.59	3.55	3.63	3.57
	SD	1.05	1.16	1.12	1.06	1.10	1.05	1.08
Seniors	\bar{X}	3.45	3.67	3.57	3.46	3.54	3.45	3.52
	SD	1.09	0.94	1.06	1.04	1.05	1.06	1.05
All Levels	\bar{X}	3.62	3.56	3.59	3.60	3.55	3.69	3.60
	SD	1.07	1.02	1.03	1.06	1.06	1.03	1.05

Table 8 (continued)

Item	Sex		Major		Firmness of		Total	
Class	Male	Female	Science	Nonscience	Occupational Goal			
Level					Decided	Undecided		
13. <u>Challenge of Work Tasks</u>								
Freshmen	\bar{X}	4.02	4.30	4.17	4.13	4.25	3.98	4.15
	SD	0.78	0.77	0.73	0.84	0.71	0.88	0.78
Sophomores	\bar{X}	4.15	4.05	4.15	4.08	4.08	4.62	4.10
	SD	0.68	0.94	0.76	0.83	0.87	0.59	0.80
Juniors	\bar{X}	4.14	4.36	4.30	4.15	4.28	4.03	4.21
	SD	0.72	0.70	0.61	0.79	0.71	0.73	0.72
Seniors	\bar{X}	4.13	4.35	4.19	4.21	4.24	4.08	4.20
	SD	0.79	0.63	0.71	0.81	0.68	0.94	0.75
All Levels	\bar{X}	4.11	4.27	4.21	4.14	4.23	4.05	4.17
	SD	0.75	0.77	0.70	0.81	0.72	0.82	0.76
14. <u>Self-Satisfaction in Job Tasks</u>								
Freshmen	\bar{X}	4.49	4.75	4.54	4.69	4.59	4.65	4.62
	SD	0.66	0.47	0.67	0.50	0.59	0.60	0.59
Sophomores	\bar{X}	4.62	4.61	4.70	4.58	4.52	4.71	4.62
	SD	0.59	0.58	0.53	0.61	0.68	0.46	0.58
Juniors	\bar{X}	4.52	4.79	4.67	4.57	4.62	4.58	4.61
	SD	0.62	0.41	0.54	0.59	0.60	0.50	0.57
Seniors	\bar{X}	4.58	4.63	4.69	4.47	4.64	4.45	4.60
	SD	0.66	0.60	0.53	0.74	0.59	0.76	0.64
All Levels	\bar{X}	4.55	4.70	4.65	4.57	4.61	4.61	4.61
	SD	0.64	0.52	0.57	0.62	0.60	0.59	0.60

Table 8 (continued)

Item Class Level	Sex		Major		Firmness of Occupational Goal		Total	
	Male	Female	Science	Nonscience	Decided	Undecided		
15. <u>Fringe Benefits</u>								
Freshmen	\bar{X}	3.45	3.25	3.33	3.37	3.35	3.35	3.35
	SD	0.94	0.97	1.00	0.91	0.91	1.04	0.95
Sophomores	\bar{X}	3.67	3.25	3.33	3.56	3.60	3.37	3.48
	SD	0.94	1.01	0.96	1.01	1.14	0.82	0.99
Juniors	\bar{X}	3.37	3.23	3.23	3.40	3.33	3.30	3.32
	SD	1.05	0.91	0.92	1.07	1.08	0.79	1.01
Seniors	\bar{X}	3.30	3.46	3.35	3.35	3.37	3.32	3.35
	SD	1.00	0.73	0.97	0.86	0.91	0.99	0.92
All Levels	\bar{X}	3.41	3.30	3.31	3.42	3.39	3.34	3.37
	SD	1.00	0.91	0.96	0.97	0.99	0.91	0.97
16. <u>Opportunity to Use Creative Ideas</u>								
Freshmen	\bar{X}	4.00	4.08	3.95	4.13	4.14	3.87	4.04
	SD	0.92	1.00	1.01	0.90	0.87	1.07	0.95
Sophomores	\bar{X}	4.22	3.98	4.06	4.14	3.94	4.27	4.11
	SD	0.74	1.05	0.93	0.88	0.93	0.83	0.89
Juniors	\bar{X}	4.16	4.06	4.21	4.06	4.16	4.05	4.13
	SD	0.83	0.89	0.80	0.89	0.89	0.75	0.85
Seniors	\bar{X}	4.13	4.08	4.25	3.93	4.14	4.03	4.11
	SD	0.79	0.88	0.78	0.85	0.84	0.75	0.82
All Levels	\bar{X}	4.13	4.05	4.14	4.06	4.12	4.06	4.10
	SD	0.82	0.95	0.87	0.88	0.87	0.87	0.87

Table 8 (continued)

Item Class Level	Sex		Major		Firmness of Occupational Goal		Total	
	Male	Female	Science	Nonscience	Decided	Undecided		
17. <u>Opportunity for Intellectual Stimulation</u>								
Freshmen	\bar{X}	4.02	4.20	4.10	4.11	4.14	4.04	4.10
	SD	0.89	0.84	0.82	0.93	0.84	0.92	0.87
Sophomores	\bar{X}	4.35	4.20	4.48	4.18	4.08	4.47	4.28
	SD	0.78	0.82	0.67	0.84	0.92	0.61	0.80
Juniors	\bar{X}	4.04	4.47	4.10	4.25	4.20	4.15	4.18
	SD	0.91	0.75	1.01	0.77	0.92	0.77	0.88
Seniors	\bar{X}	4.20	4.42	4.39	4.12	4.29	4.21	4.27
	SD	0.94	0.70	0.75	1.00	0.87	0.91	0.87
All Levels	\bar{X}	4.14	4.32	4.26	4.17	4.20	4.23	4.21
	SD	0.90	0.78	0.84	0.88	0.88	0.81	0.86
18. <u>Father</u>								
Freshmen	\bar{X}	3.28	3.45	3.21	3.52	3.44	3.22	3.36
	SD	1.35	1.29	1.32	1.32	1.31	1.35	1.32
Sophomores	\bar{X}	2.91	3.28	2.75	3.23	3.21	2.94	3.07
	SD	1.20	1.28	1.22	1.23	1.28	1.20	1.24
Juniors	\bar{X}	3.03	3.06	3.26	2.88	3.02	3.10	3.04
	SD	1.27	1.34	1.28	1.28	1.31	1.24	1.29
Seniors	\bar{X}	2.91	3.12	2.86	3.13	2.99	2.92	2.98
	SD	1.24	1.32	1.24	1.29	1.30	1.17	1.26
All Levels	\bar{X}	3.02	3.24	3.03	3.17	3.13	3.05	3.10
	SD	1.27	1.31	1.28	1.29	1.31	1.24	1.29

Table 8 (continued)

Item	Sex			Major		Firmness of Occupational Goal		Total
Class Level	Male	Female	Science	Nonscience	Decided	Undecided		
19. <u>Mother</u>								
Freshmen	\bar{X}	2.88	3.43	3.08	3.21	2.32	2.85	3.14
	SD	1.19	1.21	1.27	1.19	1.26	1.13	1.23
Sophomores	\bar{X}	2.80	3.20	2.85	3.05	3.25	2.73	2.98
	SD	1.04	1.21	1.15	1.13	1.19	1.02	1.13
Juniors	\bar{X}	2.84	3.04	3.11	2.75	2.85	3.05	2.91
	SD	1.17	1.37	1.29	1.18	1.29	1.11	1.24
Seniors	\bar{X}	2.68	3.08	2.76	2.87	2.80	2.82	2.81
	SD	1.13	1.20	1.13	1.22	1.18	1.16	1.17
All Levels	\bar{X}	2.79	3.20	2.94	2.95	2.99	2.85	2.95
	SD	1.14	1.25	1.22	1.19	1.24	1.10	1.20
20. <u>Counselor in the Psychological and Vocational Counseling Center</u>								
Freshmen	\bar{X}	2.28	2.55	2.44	2.39	2.36	2.50	2.41
	SD	1.08	1.05	1.13	1.01	1.03	1.13	1.07
Sophomores	\bar{X}	2.35	2.42	2.19	2.47	2.38	2.38	2.38
	SD	1.09	1.10	0.97	1.14	1.20	0.99	1.09
Juniors	\bar{X}	2.03	2.13	2.02	2.10	2.01	2.20	2.06
	SD	1.06	0.95	1.02	1.02	1.04	0.97	1.02
Seniors	\bar{X}	1.74	1.81	1.74	1.79	1.69	2.00	1.76
	SD	0.87	0.91	0.87	0.89	0.85	0.93	0.88
All Levels	\bar{X}	2.04	2.23	2.04	2.18	2.03	2.29	2.11
	SD	1.03	1.04	1.02	1.05	1.03	1.02	1.04

Table 8 (continued)

Item Class Level	Sex		Major		Firmness of Occupational Goal		Total	
	Male	Female	Science	Nonscience	Decided	Undecided		
21. <u>Counselor in the Career Planning and Placement Center</u>								
Freshmen	\bar{X}	2.45	2.58	2.49	2.53	2.43	2.65	2.51
	SD	1.05	1.05	1.08	1.02	1.02	1.08	1.04
Sophomores	\bar{X}	2.58	2.82	2.52	2.77	2.58	2.78	2.69
	SD	1.18	1.30	1.20	1.25	1.22	1.25	1.23
Juniors	\bar{X}	2.25	2.38	2.15	2.41	2.25	2.40	2.30
	SD	1.06	0.90	1.01	1.00	1.00	1.03	1.01
Seniors	\bar{X}	1.94	2.31	2.10	2.00	2.00	2.24	2.06
	SD	0.99	1.13	1.05	1.05	1.07	0.97	1.05
All Levels	\bar{X}	2.24	2.52	2.26	2.42	2.25	2.54	2.35
	SD	1.08	1.11	1.08	1.11	1.08	1.11	1.10
22. <u>Class Instructor</u>								
Freshmen	\bar{X}	2.54	2.55	2.57	2.52	2.51	2.61	2.54
	SD	1.08	0.93	1.07	0.94	1.00	1.02	1.00
Sophomores	\bar{X}	2.35	2.68	2.58	2.45	2.71	2.29	2.49
	SD	0.97	0.96	0.97	0.98	0.85	1.04	0.97
Juniors	\bar{X}	2.75	2.74	2.54	2.90	2.75	2.75	2.75
	SD	1.05	1.09	1.06	1.04	1.06	1.08	1.06
Seniors	\bar{X}	2.69	2.85	2.75	2.74	2.79	2.61	2.74
	SD	1.11	1.11	1.18	1.02	1.17	0.92	1.11
All Levels	\bar{X}	2.62	2.70	2.63	2.67	2.70	2.55	2.65
	SD	1.07	1.02	1.10	1.01	1.06	1.03	1.05

Table 8 (continued)

Item Class Level	Sex		Major		Firmness of Occupational Goal		Total	
	Male	Female	Science	Nonscience	Decided	Undecided		
23. <u>Academic Advisor</u>								
Freshmen	\bar{X}	2.46	2.65	2.52	2.58	2.48	2.67	2.55
	SD	1.00	1.04	1.11	0.93	1.01	1.03	1.02
Sophomores	\bar{X}	2.29	2.34	2.27	2.33	2.38	2.25	2.31
	SD	1.08	1.03	1.15	1.01	1.06	1.05	1.06
Juniors	\bar{X}	2.54	2.57	2.46	2.62	2.61	2.40	2.55
	SD	1.09	1.06	1.19	0.98	1.11	0.98	1.08
Seniors	\bar{X}	2.33	2.60	2.58	2.19	2.43	2.37	2.42
	SD	1.05	1.05	1.08	1.00	1.07	1.02	1.06
All Levels	\bar{X}	2.41	2.55	2.50	2.44	2.49	2.42	2.46
	SD	1.06	1.04	1.12	0.99	1.07	1.03	1.05
24. <u>Department Coordinator</u>								
Freshmen	\bar{X}	2.46	2.86	2.63	2.67	2.63	2.70	2.65
	SD	0.95	1.17	1.11	1.04	1.08	1.07	1.07
Sophomores	\bar{X}	2.38	2.67	2.56	2.48	2.58	2.44	2.51
	SD	1.08	1.04	1.05	1.08	1.03	1.11	1.07
Juniors	\bar{X}	2.22	2.13	1.98	2.35	2.19	2.20	2.19
	SD	1.12	1.08	1.12	1.07	1.17	0.94	1.10
Seniors	\bar{X}	2.06	2.29	2.19	2.06	2.13	2.16	2.14
	SD	1.01	1.00	1.07	0.93	1.06	0.86	1.01
All Levels	\bar{X}	2.24	2.50	2.30	2.38	2.32	2.39	2.34
	SD	1.05	1.11	1.11	1.05	1.11	1.02	1.08

Table 8 (continued)

Item Class Level	Sex		Major		Firmness of Occupational Goal		Total	
	Male	Female	Science	Nonscience	Decided	Undecided		
25. <u>Department Chairman</u>								
Freshmen	\bar{X}	2.57	2.83	2.76	2.63	2.71	2.67	2.70
	SD	0.97	1.22	1.13	1.07	1.12	1.08	1.10
Sophomores	\bar{X}	2.55	2.72	2.69	2.59	2.60	2.64	2.62
	SD	1.09	1.10	1.06	1.11	1.07	1.12	1.09
Juniors	\bar{X}	2.36	2.00	1.98	2.43	2.21	2.33	2.24
	SD	1.25	0.93	1.15	1.15	1.20	1.10	1.17
Seniors	\bar{X}	2.25	2.38	2.41	2.13	2.28	2.32	2.29
	SD	1.16	1.25	1.27	1.06	1.22	1.10	1.19
All Levels	\bar{X}	2.40	2.50	2.43	2.44	2.40	2.51	2.44
	SD	1.15	1.18	1.21	1.11	1.19	1.10	1.16
26. <u>Student</u>								
Freshmen	\bar{X}	2.20	2.00	2.03	2.18	2.03	2.24	2.10
	SD	0.89	0.96	0.88	0.97	0.95	0.87	0.92
Sophomores	\bar{X}	1.94	1.88	1.84	1.95	1.94	1.90	1.92
	SD	0.93	0.91	0.86	0.94	0.89	0.95	0.91
Juniors	\bar{X}	1.70	1.70	1.56	1.81	1.62	1.92	1.70
	SD	0.93	0.91	0.85	0.96	0.89	0.96	0.92
Seniors	\bar{X}	1.49	1.63	1.53	1.54	1.45	1.82	1.53
	SD	0.72	0.97	0.79	0.84	0.79	0.80	0.81
All Levels	\bar{X}	1.77	1.81	1.70	1.86	1.69	1.98	1.79
	SD	0.89	0.94	0.86	0.95	0.90	0.91	0.91

Table 8 (continued)

Item Class Level	Sex		Major		Firmness of Occupational Goal		Total	
	Male	Female	Science	Nonscience	Decided	Undecided		
27. <u>Fraternity Brothers or Sorority Sisters</u>								
Freshmen	\bar{X}	1.87	1.72	1.61	1.98	1.74	1.89	1.80
	SD	1.18	0.92	0.92	1.16	1.05	1.08	1.06
Sophomores	\bar{X}	1.87	1.48	1.50	1.80	1.88	1.52	1.70
	SD	1.06	0.80	0.80	1.04	1.04	0.87	0.97
Juniors	\bar{X}	1.57	1.41	1.33	1.65	1.47	1.65	1.52
	SD	0.95	0.80	0.68	1.03	0.87	1.00	0.91
Seniors	\bar{X}	1.45	1.33	1.26	1.61	1.37	1.55	1.41
	SD	0.82	0.79	0.61	0.98	0.78	0.89	0.80
All Levels	\bar{X}	1.64	1.50	1.40	1.75	1.55	1.66	1.58
	SD	0.99	0.84	0.75	1.06	0.92	0.97	0.94
28. <u>Resident Assistant in Residence Halls</u>								
Freshmen	\bar{X}	1.35	1.58	1.44	1.48	1.49	1.41	1.46
	SD	0.65	0.83	0.76	0.74	0.82	0.62	0.75
Sophomores	\bar{X}	1.46	1.41	1.59	1.37	1.55	1.33	1.44
	SD	0.79	0.59	0.80	0.66	0.77	0.63	0.71
Juniors	\bar{X}	1.25	1.32	1.16	1.36	1.30	1.20	1.27
	SD	0.67	0.69	0.49	0.78	0.70	0.61	0.68
Seniors	\bar{X}	1.26	1.15	1.23	1.22	1.21	1.29	1.23
	SD	0.63	0.46	0.65	0.48	0.59	0.57	0.58
All Levels	\bar{X}	1.31	1.37	1.32	1.35	1.34	1.31	1.33
	SD	0.68	0.68	0.68	0.68	0.71	0.61	0.68

Table 8 (continued)

Item Class Level	Sex		Major		Firmness of Occupational Goals		Total	
	Male	Female	Science	Nonscience	Decided	Undecided		
29. <u>Roommate</u>								
Freshmen	\bar{X}	1.49	1.80	1.57	1.71	1.68	1.57	1.64
	SD	0.79	0.99	0.91	0.89	0.94	0.83	0.90
Sophomores	\bar{X}	1.76	1.91	1.58	1.95	1.75	1.90	1.83
	SD	0.97	1.07	0.87	1.07	0.93	1.09	1.02
Juniors	\bar{X}	1.73	1.64	1.67	1.72	1.65	1.83	1.70
	SD	0.94	0.90	0.98	0.88	0.91	0.96	0.92
Seniors	\bar{X}	1.69	1.79	1.62	1.87	1.63	2.05	1.73
	SD	0.91	1.09	0.94	1.01	0.94	1.03	0.97
All Levels	\bar{X}	1.67	1.78	1.61	1.81	1.66	1.83	1.72
	SD	0.91	1.01	0.93	0.96	0.93	0.99	0.95
30. <u>Close Personal Friends</u>								
Freshmen	\bar{X}	2.55	2.88	2.57	2.85	2.81	2.54	2.71
	SD	1.28	1.04	1.24	1.10	1.27	0.98	1.18
Sophomores	\bar{X}	2.98	2.57	2.55	2.92	2.85	2.75	2.80
	SD	1.19	1.17	1.15	1.21	1.18	1.21	1.20
Juniors	\bar{X}	2.75	2.55	2.62	2.73	2.63	2.83	2.68
	SD	1.11	1.14	1.17	1.08	1.15	1.04	1.12
Seniors	\bar{X}	2.74	2.50	2.47	2.93	2.55	3.03	2.66
	SD	1.02	1.18	1.13	0.95	1.11	0.88	1.08
All Levels	\bar{X}	2.75	2.64	2.54	2.85	2.67	2.77	2.71
	SD	1.13	1.13	1.17	1.09	1.17	1.05	1.13

Table 8 (continued)

Item Class Level	Sex		Major		Firmness of Occupational Goals		Total	
	Male	Female	Science	Nonscience	Decided	Undecided		
31. <u>Person Working in Your Chosen Occupation</u>								
Freshmen	\bar{X}	4.06	4.05	4.17	3.94	4.01	4.13	4.06
	SD	0.93	0.96	0.85	1.02	0.98	0.88	0.94
Sophomores	\bar{X}	4.02	3.98	4.15	3.92	3.98	4.02	4.00
	SD	0.83	1.09	0.67	1.06	0.96	0.95	0.95
Juniors	\bar{X}	3.93	4.02	3.95	3.96	3.97	3.93	3.96
	SD	1.01	0.82	0.99	0.93	1.00	0.83	0.95
Seniors	\bar{X}	3.77	3.71	3.62	3.93	3.73	3.82	3.75
	SD	1.06	0.89	1.14	0.76	1.06	0.83	1.01
All Levels	\bar{X}	3.92	3.94	3.91	3.94	3.90	3.98	3.93
	SD	0.99	0.95	1.01	0.94	1.01	0.88	0.97
32. <u>State Employment Agent</u>								
Freshmen	\bar{X}	2.05	2.20	2.08	2.16	1.99	2.35	2.12
	SD	1.02	1.25	1.13	1.10	1.15	1.08	1.13
Sophomores	\bar{X}	2.00	1.98	1.91	2.03	1.98	2.00	1.99
	SD	0.96	1.13	0.98	1.07	1.04	1.04	1.04
Juniors	\bar{X}	1.87	1.98	1.64	2.11	1.80	2.18	1.91
	SD	0.99	1.15	0.95	1.07	1.03	1.03	1.04
Seniors	\bar{X}	1.62	1.71	1.55	1.78	1.59	1.84	1.65
	SD	0.90	0.94	0.89	0.93	0.93	0.82	0.91
All Levels	\bar{X}	1.85	1.98	1.76	2.02	1.79	2.10	1.90
	SD	0.98	1.13	1.01	1.05	1.04	1.02	1.04

Table 8 (continued)

Item Class Level	Sex		Major		Firmness of Organizational Goals		Total	
	Male	Female	Science	Nonscience	Decided	Undecided		
33. <u>Choose Any Occupation for a Trial Period</u>								
Freshmen	\bar{X}	2.18	2.20	2.10	2.30	2.23	2.13	2.19
	SD	1.24	0.98	1.16	1.07	1.12	1.13	1.12
Sophomores	\bar{X}	2.25	2.44	2.19	2.41	2.10	2.56	2.34
	SD	1.25	1.20	1.15	1.26	1.08	1.33	1.23
Juniors	\bar{X}	2.24	2.02	2.15	2.19	1.97	2.68	2.17
	SD	1.18	1.17	1.17	1.19	1.16	1.07	1.18
Seniors	\bar{X}	1.97	2.15	2.05	2.00	1.90	2.45	2.03
	SD	1.13	1.09	1.15	1.09	1.07	1.18	1.12
All Levels	\bar{X}	2.14	2.20	2.10	2.22	2.02	2.45	2.16
	SD	1.19	1.10	1.15	1.16	1.11	1.20	1.16
34. <u>Follow Your Own Intuition</u>								
Freshmen	\bar{X}	3.66	3.80	3.59	3.87	3.76	3.67	3.73
	SD	0.96	0.88	0.91	0.91	0.99	0.79	0.92
Sophomores	\bar{X}	3.87	3.77	3.82	3.83	3.85	3.80	3.83
	SD	0.79	0.86	0.86	0.81	0.90	0.75	0.82
Juniors	\bar{X}	3.81	3.94	3.95	3.78	3.90	3.73	3.85
	SD	0.94	0.79	0.87	0.91	0.94	0.75	0.89
Seniors	\bar{X}	3.79	3.81	3.82	3.76	3.81	3.74	3.80
	SD	0.96	0.89	0.91	0.98	0.96	0.86	0.94
All Levels	\bar{X}	3.78	3.83	3.79	3.81	3.83	3.74	3.80
	SD	0.93	0.85	0.90	0.90	0.95	0.78	0.90

Table 8 (continued)

Item Class Level	Sex		Major		Firmness of Occupational Goal		Total	
	Male	Female	Science	Nonscience	Decided	Undecided		
35. <u>Postpone the Decision Until Something Comes Along</u>								
Freshmen	\bar{X}	2.57	2.62	2.49	2.69	2.60	2.63	2.59
	SD	1.10	1.09	1.16	1.02	1.14	1.02	1.09
Sophomores	\bar{X}	2.84	2.50	3.00	2.53	2.42	2.94	2.69
	SD	1.23	1.17	1.25	1.17	1.25	1.12	1.21
Juniors	\bar{X}	2.52	2.33	2.38	2.51	2.40	2.60	2.45
	SD	1.08	1.17	1.13	1.10	1.10	1.15	1.11
Seniors	\bar{X}	2.33	2.52	2.35	2.45	2.20	3.00	2.39
	SD	1.12	1.00	1.10	1.06	1.04	1.01	1.08
All Levels	\bar{X}	2.52	2.50	2.48	2.54	2.37	2.79	2.51
	SD	1.13	1.10	1.16	1.09	1.11	1.08	1.12
36. <u>See A Counselor in the Psychological and Vocational Counseling Center</u>								
Freshmen	\bar{X}	2.40	2.38	2.41	2.37	2.34	2.48	2.39
	SD	1.22	1.28	1.35	1.13	1.19	1.35	1.24
Sophomores	\bar{X}	2.29	2.55	2.33	2.44	2.19	2.61	2.40
	SD	1.21	1.17	1.32	1.14	1.14	1.22	1.19
Juniors	\bar{X}	1.93	1.96	1.77	2.06	1.91	2.00	1.94
	SD	1.02	0.95	0.94	1.03	1.00	1.01	1.00
Seniors	\bar{X}	1.90	1.88	1.90	1.88	1.81	2.16	1.89
	SD	1.04	1.04	1.05	1.02	1.02	1.05	1.04
All Levels	\bar{X}	2.07	2.19	2.06	2.18	2.01	2.34	2.12
	SD	1.12	1.15	1.17	1.09	1.09	1.19	1.13

Table 8 (continued)

Item	Sex		Major		Firmness of Occupational Goal		Total	
Class Level	Male	Female	Science	Nonscience	Decided	Undecided		
37. <u>See A Counselor in the Career Planning and Placement Center</u>								
Freshmen	\bar{X}	2.83	2.82	2.76	2.89	2.72	3.00	2.82
	SD	1.27	1.41	1.35	1.32	1.32	1.35	1.33
Sophomores	\bar{X}	2.53	3.00	2.52	2.85	2.58	2.88	2.74
	SD	1.33	1.26	1.35	1.29	1.30	1.32	1.31
Juniors	\bar{X}	2.23	2.45	2.05	2.49	2.25	2.43	2.30
	SD	1.24	1.16	1.16	1.23	1.18	1.30	1.21
Seniors	\bar{X}	2.34	2.52	2.40	2.40	2.32	2.66	2.40
	SD	1.28	1.42	1.33	1.33	1.34	1.26	1.32
All Levels	\bar{X}	2.44	2.69	2.42	2.64	2.43	2.76	2.54
	SD	1.29	1.33	1.31	1.30	1.29	1.32	1.31
38. <u>Talk to Personal Friends</u>								
Freshmen	\bar{X}	3.12	3.42	3.08	3.45	3.38	3.07	3.26
	SD	1.10	1.17	1.24	1.00	1.19	1.02	1.14
Sophomores	\bar{X}	3.36	3.36	3.61	3.24	3.31	3.41	3.36
	SD	1.11	1.10	1.03	1.12	0.97	1.22	1.10
Juniors	\bar{X}	3.12	3.26	3.20	3.14	3.06	3.43	3.16
	SD	1.14	1.19	1.17	1.15	1.17	1.08	1.15
Seniors	\bar{X}	3.06	3.25	3.01	3.26	3.10	3.18	3.12
	SD	1.12	1.10	1.16	1.05	1.13	1.06	1.11
All Levels	\bar{X}	3.14	3.33	3.15	3.26	3.18	3.27	3.21
	SD	1.12	1.14	1.17	1.09	1.14	1.11	1.13

Table 8 (continued)

Item Class Level	Sex		Major		Firmness of Occupational Goal		Total	
	Male	Female	Science	Nonscience	Decided	Undecided		
39. <u>Talk to Parents</u>								
Freshmen	\bar{X}	3.98	3.93	3.70	4.23	4.13	3.67	3.96
	SD	1.19	1.34	1.35	1.11	1.22	1.28	1.26
Sophomores	\bar{X}	3.82	4.02	3.82	3.95	4.08	3.75	3.91
	SD	1.07	1.21	1.26	1.07	1.07	1.18	1.13
Juniors	\bar{X}	3.65	3.53	3.69	3.56	3.56	3.75	3.61
	SD	1.28	1.27	1.27	1.27	1.32	1.15	1.27
Seniors	\bar{X}	3.57	3.46	3.52	3.56	3.50	3.63	3.53
	SD	1.17	1.18	1.14	1.21	1.16	1.20	1.17
All Levels	\bar{X}	3.72	3.74	3.64	3.80	3.74	3.70	3.73
	SD	1.20	1.27	1.24	1.20	1.24	1.20	1.22
40. <u>Talk to Class Instructors</u>								
Freshmen	\bar{X}	2.88	2.90	2.98	2.79	2.94	2.80	2.89
	SD	1.22	1.28	1.29	1.20	1.27	1.20	1.24
Sophomores	\bar{X}	2.69	2.91	3.03	2.67	2.83	2.75	2.79
	SD	1.17	1.20	1.33	1.09	1.21	1.16	1.18
Juniors	\bar{X}	2.98	2.96	3.08	2.89	2.96	3.00	2.97
	SD	1.15	1.22	1.19	1.12	1.19	1.06	1.15
Seniors	\bar{X}	3.13	3.10	3.25	2.94	3.18	2.92	3.12
	SD	1.13	1.22	1.17	1.13	1.16	1.15	1.16
All Levels	\bar{X}	2.96	2.97	3.11	2.83	3.01	2.86	2.96
	SD	1.16	1.23	1.22	1.13	1.20	1.14	1.18

Table 8 (continued)

Item Class Level	Sex		Major		Firmness of Occupational Goal		Total	
	Male	Female	Science	Nonscience	Decided	Undecided		
41. <u>Talk to Person Working in the Occupation You Are Interested In</u>								
Freshmen	\bar{X}	4.48	4.28	4.41	4.35	4.49	4.20	4.38
	SD	0.77	0.98	0.84	0.93	0.85	0.91	0.88
Sophomores	\bar{X}	4.31	4.43	4.55	4.27	4.44	4.29	4.36
	SD	0.90	0.79	0.71	0.90	0.74	0.94	0.85
Juniors	\bar{X}	4.38	4.35	4.26	4.45	4.38	4.35	4.37
	SD	0.85	0.67	1.00	0.59	0.81	0.77	0.80
Seniors	\bar{X}	4.32	4.42	4.48	4.18	4.39	4.24	4.35
	SD	0.73	0.64	0.56	0.83	0.71	0.68	0.70
All Levels	\bar{X}	4.37	4.37	4.42	4.32	4.42	4.27	4.37
	SD	0.81	0.79	0.78	0.81	0.77	0.84	0.80
42. <u>Check Resources Indicating Trends in Future Job Openings</u>								
Freshmen	\bar{X}	4.08	4.03	4.06	4.05	3.97	4.20	4.06
	SD	1.11	0.90	1.12	0.89	1.07	0.88	1.01
Sophomores	\bar{X}	3.84	4.07	3.94	3.94	4.02	3.86	3.94
	SD	1.12	1.02	1.37	0.91	1.00	1.15	1.08
Juniors	\bar{X}	3.91	4.17	4.00	3.99	3.98	4.03	3.99
	SD	1.03	1.01	1.00	1.05	1.05	0.97	1.03
Seniors	\bar{X}	3.72	3.73	3.83	3.57	3.80	3.45	3.72
	SD	1.12	1.09	1.14	1.06	1.08	1.16	1.11
All Levels	\bar{X}	3.86	4.00	3.94	3.89	3.92	3.90	3.91
	SD	1.10	1.01	1.13	1.00	1.06	1.07	1.06

Table 8 (continued)

Item Class Level	Sex		Major		Firmness of Occupational Goal		Total	
	Male	Female	Science	Nonscience	Decided	Undecided		
43. <u>Read Some Literature Concerning Career Decision</u>								
Freshmen	\bar{X}	2.85	3.13	2.98	2.98	2.99	2.98	2.98
	SD	1.19	1.21	1.25	1.17	1.25	1.14	1.20
Sophomores	\bar{X}	2.75	2.77	2.76	2.76	2.52	2.98	2.98
	SD	1.21	1.40	1.30	1.29	1.27	1.27	1.29
Juniors	\bar{X}	2.61	2.60	2.64	2.58	2.56	2.73	2.61
	SD	1.26	1.17	1.34	1.14	1.26	1.15	1.23
Seniors	\bar{X}	2.77	2.46	2.71	2.62	2.71	2.55	2.67
	SD	1.22	1.29	1.25	1.26	1.33	0.95	1.25
All Levels	\bar{X}	2.74	2.76	2.77	2.72	2.70	2.83	2.74
	SD	1.22	1.28	1.28	1.22	1.29	1.15	1.24
44. <u>Get Some Information About the Occupation You Are Interested In</u>								
Freshmen	\bar{X}	4.34	4.38	4.41	4.31	4.41	4.28	4.36
	SD	0.85	0.76	0.71	0.90	0.81	0.81	0.81
Sophomores	\bar{X}	4.36	4.36	4.48	4.30	4.31	4.41	4.36
	SD	0.78	0.78	0.76	0.78	0.80	0.75	0.78
Juniors	\bar{X}	4.33	4.40	4.41	4.31	4.35	4.35	4.35
	SD	0.96	0.83	0.84	0.97	0.98	0.74	0.92
Seniors	\bar{X}	4.28	4.35	4.40	4.18	4.36	4.13	4.30
	SD	0.79	0.79	0.71	0.88	0.80	0.74	0.79
All Levels	\bar{X}	4.32	4.37	4.42	4.27	4.36	4.30	4.34
	SD	0.85	0.78	0.75	0.89	0.86	0.76	0.83

Table 8 (continued)

Item Class Level	Sex		Major		Firmness of Occupational Goal		Total	
	Male	Female	Science	Nonscience	Decided	Undecided		
45. <u>Visit Work Sites</u>								
Freshmen	\bar{X}	3.71	4.13	4.00	3.82	3.95	3.85	3.91
	SD	1.18	0.96	1.08	1.12	1.11	1.09	1.10
Sophomores	\bar{X}	3.91	3.93	3.79	3.98	3.92	3.92	3.92
	SD	1.21	1.19	1.29	1.14	1.20	1.20	1.20
Juniors	\bar{X}	3.73	4.04	4.08	3.64	3.94	3.55	3.83
	SD	1.16	0.91	1.04	1.10	1.12	0.96	1.09
Seniors	\bar{X}	4.09	3.85	4.30	3.62	4.08	3.79	4.01
	SD	1.00	1.11	0.84	1.15	1.02	1.07	1.04
All Levels	\bar{X}	3.88	4.00	4.10	3.76	3.99	3.79	3.92
	SD	1.13	1.04	1.03	1.13	1.09	1.09	1.10
46. <u>Self-Assess Your Own Strengths and Weaknesses</u>								
Freshmen	\bar{X}	3.88	4.05	4.03	3.89	3.97	3.93	3.96
	SD	1.01	0.98	1.08	0.91	1.03	0.95	1.00
Sophomores	\bar{X}	4.11	4.14	4.03	4.17	4.13	4.12	4.12
	SD	0.85	0.88	1.07	0.73	0.94	0.79	0.86
Juniors	\bar{X}	4.06	4.21	4.15	4.09	4.20	3.90	4.11
	SD	0.88	0.86	0.90	0.85	0.81	0.98	0.87
Seniors	\bar{X}	3.95	4.15	4.09	3.91	4.09	3.76	4.01
	SD	0.89	0.87	0.80	0.99	0.85	0.97	0.89
All Levels	\bar{X}	3.99	4.13	4.08	4.02	4.10	3.94	4.05
	SD	0.91	0.90	0.93	0.88	0.89	0.92	0.90

Table 8 (continued)

Item Class Level	Sex		Major		Firmness of Occupational Goal		Total	
	Male	Female	Science	Nonscience	Decided	Undecided		
47. <u>Take Some Tests</u>								
Freshmen	\bar{X}	3.08	3.55	3.73	3.24	3.25	3.39	3.30
	SD	1.23	1.19	1.36	1.08	1.20	1.27	1.23
Sophomores	\bar{X}	3.24	3.07	3.24	3.12	3.13	3.20	3.16
	SD	1.39	1.39	1.48	1.34	1.47	1.31	1.38
Juniors	\bar{X}	3.82	2.98	2.77	2.95	2.87	2.88	2.87
	SD	1.30	1.33	1.28	1.32	1.35	1.18	1.30
Seniors	\bar{X}	2.84	2.96	2.91	2.84	2.89	2.87	2.88
	SD	1.18	1.30	1.19	1.27	1.28	1.02	1.22
All Levels	\bar{X}	2.95	3.16	3.04	3.03	3.00	3.10	3.03
	SD	1.27	1.31	1.31	1.27	1.32	1.22	1.28
48. <u>Review Materials in the Career Resource Center</u>								
Freshmen	\bar{X}	2.48	2.83	2.60	2.69	2.59	2.74	2.65
	SD	1.09	1.11	1.17	1.05	1.16	1.02	1.11
Sophomores	\bar{X}	2.69	2.55	2.58	2.65	2.44	2.80	2.63
	SD	1.12	1.42	1.39	1.20	1.27	1.23	1.26
Juniors	\bar{X}	2.36	2.68	2.28	2.60	2.41	2.60	2.46
	SD	1.15	1.18	1.03	1.24	1.16	1.17	1.16
Seniors	\bar{X}	2.39	2.81	2.55	2.50	2.50	2.63	2.53
	SD	1.15	1.28	1.18	1.26	1.21	1.22	1.21
All Levels	\bar{X}	2.45	2.73	2.50	2.61	2.49	2.70	2.56
	SD	1.14	1.24	1.17	1.19	1.19	1.16	1.18

Table 9

Mean Rank Order of Values Broken-down by Class Level,
Sex, Major, and Firmness of Occupational Goal

Ranks	Class Level				Sex		Major		Firmness of Occupational Goal		
	F	S	Jr	Sr	M	F	S	NS	D	UD	All
1	5	5	5	5	5	5	5	5	5	5	5
2	14	14	14	14	14	14	14	14	14	14	14
3	4	11	11	11	11	11	11	4	11	4	11
4	3	17	13	4	4	17	17	11	4	17	4
5	11	4	8	17	17	13	13	17	13	11	17
6	13	16	17	13	16	4	4	13	17	3	13
7	17	13	4	16	13	3	6	3	3	16	3
8	16	3	16	3	3	8	16	16	16	13	16
9	6	8	6	8	8	6	3	8	8	6	8
10	1	6	3	6	6	7	8	10	6	8	6
11	8	7	7	7	1	16	7	1	7	1	7
12	7	1	10	9	7	9	9	6	9	7	1
13	9	9	9	10	10	10	1	7	10	12	9
14	10	10	1	1	9	1	12	9	1	9	10
15	12	12	12	12	12	12	10	12	12	10	12
16	2	15	15	15	15	15	15	2	15	15	15
17	15	2	2	2	2	2	2	15	2	2	2

*Numbers refer to the item number of the CDMI

Table 10

Mean Rank Order of Influential People Broken-down by Class Level,
Sex, Major, and Firmness of Occupational Goal

Ranks	Class Level				Sex		Major		Firmness of Occupational Goal		
	F	S	Jr	Sr	M	F	S	NS	D	UD	All
1	31	31	31	31	31	31	31	31	31	31	31
2	18	18	18	18	18	18	18	18	18	18	18
3	19	19	19	19	19	19	19	19	19	19	19
4	30	30	22	22	30	22	22	30	22	30	30
5	25	21	30	30	22	30	30	22	30	22	22
6	24	25	23	23	23	23	23	23	23	21	23
7	23	24	21	25	25	21	25	25	25	25	25
8	22	22	25	24	24	24	24	21	24	23	21
9	21	20	24	21	21	25	21	24	21	24	24
10	20	23	20	20	20	20	20	20	20	20	20
11	32	32	32	29	32	32	32	32	32	32	32
12	26	26	26	32	26	26	26	26	26	26	29
13	27	29	29	26	29	29	29	29	29	29	27
14	29	27	27	27	27	27	27	27	27	27	28
15	28	28	28	28	28	28	28	28	28	28	26

*Numbers refer to the item number of the CDMI

Table 11

Mean Rank Order of Actions Broken-down by Class Level,
Sex, Major, and Firmness of Occupational Goal

Ranks	Class Level				Sex		Major		Firmness of Occupational Goal		
	F	S	Jr	Sr	M	F	S	NS	D	UD	All
1	41	41	41	41	41	41	41	41	41	44	41
2	44	44	44	44	44	44	44	44	44	41	44
3	42	46	46	46	46	46	45	46	46	46	46
4	46	42	42	45	45	45	46	42	45	42	45
5	39	45	34	34	42	42	42	34	42	45	42
6	45	39	45	42	34	34	34	39	34	34	34
7	40	34	39	39	39	39	39	45	39	39	39
8	34	38	38	38	38	38	38	38	38	38	38
9	47	47	40	40	40	47	40	47	40	47	47
10	38	40	47	47	47	40	47	40	47	40	40
11	43	43	43	43	43	43	43	43	43	43	43
12	37	37	48	48	35	48	48	37	48	35	48
13	48	35	35	37	48	37	35	48	37	37	37
14	35	48	37	35	37	35	37	35	35	48	35
15	36	36	33	33	33	33	33	33	33	33	33
16	33	33	36	36	36	36	36	36	36	36	36

*Numbers refer to the item number of the CDMI

Table 12

Analysis of Variance of the Career Decision-Making Inventory

Source	1. Salary				2. Prestige of the Occupation			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	5.50	1	5.50	7.90*	2.01	1	2.01	2.13
Major (B)	6.40	1	6.40	9.19*	12.43	1	12.43	12.72*
Decision (C)	1.00	1	1.00	1.43	2.64	1	2.64	2.70
Class Level (D)	8.81	3	2.94	4.21*	9.09	3	3.03	3.10*
AxB	.06	1	.06	.08	.10	1	.10	.10
AxC	.54	1	.54	.78	.41	1	.41	.42
AxD	.10	3	.03	.05	1.06	3	.35	.36
BxC	.00	1	.00	.00	.13	1	.13	.13
BxD	1.02	3	.34	.49	1.06	3	.35	.36
CxD	2.61	3	.87	1.25	4.26	3	1.42	1.45
AxBxC	1.11	1	1.11	1.59	.41	1	.41	.42
AxBxD	.59	3	.20	.28	4.22	3	1.41	1.44
AxCxD	.82	3	.27	.39	1.91	3	.64	.65
BxCxD	1.39	3	.47	.67	3.19	3	1.06	1.09
AxBxCxD	2.54	3	.85	1.22	2.31	3	.77	.79
Explained	32.34	31	1.04	1.50	44.43	31	1.43	1.47
Residual	342.79	492	.70		480.58	492	.98	
Total	375.13	523	.72		525.01	523	1.00	

* $p < .05$

Table 12 (continued)

Source	3. Job Security				4. Potential for Advancement			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	.80	1	.80	1.14	1.00	1	1.00	1.40
Major (B)	1.11	1	1.11	1.59	3.98	1	3.98	5.60*
Decision (C)	1.22	1	1.22	1.74	.00	1	.00	.00
Class Level (D)	5.75	3	1.92	2.73*	2.08	3	.69	.98
AxB	.01	1	.01	.01	.40	1	.40	.56
AxC	.31	1	.31	.45	1.61	1	1.61	2.26
AxD	4.65	3	1.55	2.21	.37	3	.12	.17
BxC	1.31	1	1.31	1.87	.89	1	.89	1.26
BxD	1.38	3	.46	.66	1.21	3	.40	.57
CxD	2.42	3	.81	1.15	1.13	3	.38	.53
AxBxC	.22	1	.22	.31	.02	1	.02	.03
AxBxD	2.82	3	.94	1.34	1.90	3	.63	.89
AxCxD	4.70	3	1.57	2.23	.35	3	.12	.16
BxCxD	5.21	3	1.74	2.48	.30	3	.10	.14
AxBxCxD	6.54	3	2.18	3.11*	.25	3	.08	.12
Explained	21.77	31	.70	1.00	19.48	31	.63	.88
Residual	345.34	492	.70		349.56	492	.71	
Total	367.11	523	.70		369.04	523	.71	

* $p < .05$

Table 12 (continued)

Source	5. Interest in the Field				6. Working Environment			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	1.51	1	1.51	5.19*	1.89	1	1.89	2.65
Major (B)	.57	1	.57	1.96	7.99	1	7.99	11.202*
Decision (C)	.00	1	.00	.00	.24	1	.24	.33
Class Level (D)	2.54	3	.85	2.91*	1.65	3	.55	.77
AxB	.00	1	.00	.00	.00	1	.00	.00
AxC	.00	1	.00	.00	.34	1	.34	.48
AxD	.33	3	.11	.38	1.29	3	.43	.60
BxC	.15	1	.15	.50	.31	1	.31	.43
BxD	.04	3	.01	.04	2.04	3	.68	.95
CxD	.08	3	.03	.09	1.18	3	.39	.55
AxBxC	1.05	1	1.05	3.61	.57	1	.57	.79
AxBxD	.73	3	.23	.83	2.96	3	.99	1.38
AxCxD	.94	3	.32	1.08	3.04	3	1.01	1.42
BxCxD	.19	3	.06	.22	.62	3	.21	.29
AxBxCxD	1.15	3	.38	1.32	8.57	3	2.86	4.00*
Explained	10.85	31	.35	1.20	36.45	31	1.18	1.65
Residual	143.37	492	.29		350.37	491	.71	
Total	154.22	523	.30		386.82	522	.74	

* $p < .05$

Table 12 (continued)

Source	7. Variety of work Duties				8. Independence of duties			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	8.06	1	8.06	10.41*	.24	1	.24	.31
Major (B)	2.69	1	2.69	3.47	.00	1	.00	.00
Decision (C)	.69	1	.69	.89	4.16	1	4.16	5.21*
Class Level (D)	6.38	3	2.13	2.75*	6.18	3	2.27	2.84*
AxB	.84	1	.84	1.08	.04	1	.04	.05
AxC	1.77	1	1.77	2.28	.04	1	.04	.05
AxD	.49	3	.16	.21	2.12	3	.71	.88
BxC	.46	1	.46	.60	.04	1	.04	.05
BxD	3.75	3	1.25	1.61	5.24	3	1.75	2.19
CxD	2.34	3	.78	1.01	1.32	3	.44	.55
AxBxC	.71	1	.71	.92	.02	1	.02	.02
AxBxD	2.27	3	.76	.98	1.08	3	.36	.45
AxCxD	2.25	3	.75	.97	2.60	3	.87	1.09
BxCxD	1.15	3	.38	.49	1.66	3	.55	.69
AxBxCxD	3.71	3	1.24	1.60	1.80	3	.60	.75
Explained	43.75	31	1.41	1.82	26.50	31	.86	1.07
Residual	380.25	491	.77		391.75	491	.80	
Total	424.00	522	.81		418.25	522	.80	

* $p < .05$

Table 12 (continued)

Source	9. Helping others (altruism)				10. Leadership			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	2.17	1	2.17	2.26	1.15	1	5.20	5.27
Major (B)	7.68	1	7.68	7.99*	15.88	1	15.88	16.08*
Decision (C)	8.53	1	8.53	8.89*	17.52	1	17.52	17.75*
Class Level (D)	3.77	3	1.26	1.31	.68	3	.23	.23
AxB	1.16	1	1.16	1.21	.22	1	.22	.23
AxC	.31	1	.31	.32	1.14	1	1.14	1.15
AxD	8.83	3	2.94	3.06*	3.02	3	1.01	1.02
BxC	3.65	1	3.65	3.80	1.23	1	1.23	1.25
BxD	.71	3	.24	.25	1.99	3	.66	.67
CxD	1.49	3	.50	.52	1.00	3	.34	.80
AxBxC	.05	1	.05	.05	.17	1	.17	.18
AxBxD	3.55	3	1.18	1.23	3.69	3	1.23	1.25
AxCxD	2.33	3	.78	.81	2.21	3	.74	.53
BxCxD	3.28	3	1.09	1.14	.55	3	.18	.19
AxBxCxD	3.39	3	1.13	1.18	2.31	3	.77	.78
Explained	56.52	31	1.82	1.90	52.55	31	1.70	1.72
Residual	471.63	491	.96		484.60	491	.99	
Total	528.15	522	1.01		537.14	522	1.03	

* $p < .05$

Table 12 (continued)

Source	11. Opportunity to use your special talents				12. Leisure			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	.05	1	.05	.08	2.19	1	2.19	1.96
Major (B)	.20	1	.20	.30	.09	1	.09	.08
Decision (C)	1.55	1	1.55	2.29	.66	1	.66	.59
Class Level (D)	1.72	3	.57	.84	2.73	3	.91	.82
AxB	.14	1	.14	.20	.05	1	.05	.04
AxC	.00	1	.00	.00	.04	1	.04	.04
AxD	3.94	3	1.31	1.93	3.67	3	1.22	1.09
BxC	.07	1	.07	.10	.76	1	.76	.68
BxD	2.13	3	.71	1.04	.75	3	.25	.23
CxD	2.80	3	.93	1.37	1.89	3	.63	.56
AxBxC	.42	1	.42	.62	.18	1	.18	.16
AxBxD	1.57	3	.52	.77	3.59	3	1.20	1.07
AxCxD	2.00	3	.67	.98	2.28	3	.76	.68
BxCxD	2.87	3	.96	1.41	1.13	3	.38	.38
AxBxCxD	2.02	3	.67	.99	1.46	3	.49	.44
Explained	22.10	31	.71	1.05	23.69	31	.76	.68
Residual	334.65	493	.68		551.04	493	1.12	
Total	356.75	524	.68		574.73	524	1.10	

* $p < .05$

Table 12 (continued)

Source	13. Challenge of work tasks				14. Self-satisfaction			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	1.73	1	1.73	2.98	1.61	1	1.61	4.59*
Major (B)	.11	1	.11	.19	.26	1	.26	.73
Decision (C)	3.12	1	3.12	5.38*	.01	1	.01	.02
Class Level (D)	.54	3	.18	.31	.53	3	.18	.51
AxB	.98	1	.98	1.68	.20	1	.20	.58
AxC	.37	1	.37	.63	.60	1	.60	1.72
AxD	2.97	3	.99	1.71	1.40	3	.47	1.33
BxC	.33	1	.33	.57	.26	1	.26	.74
BxD	1.93	3	.64	1.11	.65	3	.22	.62
CxD	.90	3	.30	.52	1.75	3	.58	1.67
AxBxC	.02	1	.02	.04	.41	1	.41	1.16
AxBxD	1.33	3	.44	.76	.65	3	.22	.62
AxCxD	.73	3	.25	.42	.39	3	.13	.37
BxCxD	.87	3	.29	.50	.72	3	.24	.68
AxBxCxD	.45	3	.15	.26	1.20	3	.40	1.14
Explained	17.58	31	.57	.98	14.05	31	.45	1.29
Residual	285.63	493	.58		172.90	493	.35	
Total	303.21	524	.58		186.95	524	.36	

* $p < .05$

Table 12 (continued)

	15. Fringe benefits				16. Opportunity to use creative ideas			
Sex (A)	6.09	1	6.09	6.45*	.93	1	.93	1.24
Major (B)	1.63	1	1.63	1.72	.43	1	.43	.57
Decision (C)	2.47	1	2.47	2.62	.01	1	.01	.02
Class Level (D)	2.40	3	.80	.85	1.52	3	.51	.68
AxB	.68	1	.68	.72	2.51	1	2.51	3.35
AxC	1.62	1	1.62	1.71	.61	1	.61	.81
AxD	3.51	3	1.17	1.24	1.21	3	.40	.54
BxC	.22	1	.22	.23	.51	1	.51	.68
BxD	1.39	3	.46	.49	3.83	3	1.29	1.71
CxD	.64	3	.21	.23	4.75	3	1.58	2.11
AxBxC	2.12	1	2.12	2.24	.34	1	.34	.45
AxBxD	.63	3	.21	.22	1.04	3	.35	.46
AxCxD	6.54	3	2.18	2.31	3.61	3	1.20	1.61
BxCxD	1.33	3	.44	.47	4.67	3	1.56	2.08
AxBxCxD	.98	3	.33	.35	.60	3	.20	.27
Explained	25.25	31	.81	.86	27.92	31	.90	1.20
Residual	465.29	493	.94		366.46	489	.75	
Total	490.54	524	.94		394.38	520	.76	

* $p < .05$

Table 12 (continued)

Source	17. Opportunity for intellectual stimulation				18. Father			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	2.79	1	2.79	3.79	2.75	1	2.75	1.69
Major (B)	2.45	1	2.45	3.34	2.46	1	2.46	1.51
Decision (C)	.60	1	.60	.82	2.02	1	2.02	1.24
Class Level (D)	3.48	3	1.16	1.60	6.51	3	2.17	1.33
AxB	.01	1	.01	.02	.75	1	.75	.46
AxC	.01	1	.01	.01	1.01	1	1.01	.62
AxD	4.33	3	1.44	1.97	.49	3	.16	.10
BxC	.43	1	.43	.59	.29	1	.29	.18
BxD	1.15	3	.38	.52	7.06	3	2.35	1.45
CxD	2.64	3	.88	1.20	.65	3	.22	.13
AxBxC	.49	1	.49	.66	2.80	1	2.80	1.72
AxBxD	.98	3	.33	.45	5.03	3	1.63	1.03
AxCxD	.87	3	.29	.39	3.38	3	1.13	.69
BxCxD	2.93	3	.98	1.33	9.65	3	3.22	1.98
AxBxCxD	.62	3	.21	.28	1.66	3	.55	.34
Explained	26.21	31	.85	1.15	63.42	31	2.05	1.26
Residual	359.38	489	.74		795.35	489	1.63	
Total	385.59	520	.74		858.76	520	1.65	

* $p < .05$

Table 12 (continued)

Source	19. Mother				20. Counselor in the Counseling Center			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	12.34	1	12.34	8.91*	1.79	1	1.79	1.79
Major (B)	.15	1	.15	.11	.47	1	.47	.47
Decision (C)	3.22	1	3.22	2.32	4.21	1	4.21	4.20*
Class Level (D)	1.45	3	.48	.35	19.69	3	6.56	6.56*
AxB	.52	1	.52	.37	3.72	1	3.72	3.71
AxC	.11	1	.11	.08	3.34	1	3.34	3.34
AxD	.99	3	.33	.24	1.92	3	.64	.64
BxC	.02	1	.02	.01	1.23	1	1.23	1.23
BxD	2.72	3	.91	.65	2.83	3	.94	.94
CxD	6.38	3	2.13	1.53	.95	3	.32	.32
AxBxC	2.69	1	2.69	1.94	.03	1	.03	.03
AxBxD	5.79	3	1.93	1.39	4.73	3	1.58	1.58
AxCxD	.10	3	.03	.02	1.14	3	.38	.38
BxCxD	11.62	3	3.87	2.79*	3.09	3	1.03	1.03
AxBxCxD	.42	3	.14	.10	1.07	3	.36	.36
Explained	73.61	31	2.38	1.71	68.50	31	2.21	2.21
Residual	677.73	489	1.39		489.32	489	1.00	
Total	751.34	520	1.45		557.82	520	1.07	

* $p < .05$

Table 12 (continued)

Source	21. Counselor in the Placement Center				22. Class instructor			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	4.14	1	4.14	3.66	1.92	1	1.92	1.71
Major (B)	.77	1	.77	.68	.34	1	.34	.30
Decision (C)	4.57	1	4.57	4.04*	1.16	1	1.16	1.03
Class Level (D)	13.23	3	4.41	3.90*	2.17	3	.72	.65
AxB	3.36	1	3.36	2.97	.08	1	.08	.07
AxC	1.70	1	1.70	1.51	1.07	1	1.07	.95
AxD	1.75	3	.58	.52	1.73	3	.58	.51
BxC	.93	1	.93	.82	.28	1	.28	.25
BxD	4.26	3	1.42	1.26	2.78	3	.93	.82
CxD	.61	3	.20	.18	3.13	3	1.04	.93
AxBxC	.29	1	.29	.26	.06	1	.06	.05
AxBxD	5.82	3	1.94	1.72	1.42	3	.47	.42
AxCxD	8.77	3	2.93	2.59	1.35	3	.45	.40
BxCxD	5.55	3	1.85	1.64	.80	3	.27	.24
AxBxCxD	2.73	3	.91	.80	1.07	3	.36	.32
Explained	74.88	31	2.42	2.14	26.29	31	.85	.76
Residual	556.17	492	1.13		552.77	492	1.12	
Total	631.05	523	1.21		579.06	523	1.11	

* $p < .05$

Table 12 (continued)

Source	23. Academic advisor				24. Department coordinator			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	3.41	1	3.41	3.05	4.51	1	4.51	3.99*
Major (B)	.34	1	.34	.31	.53	1	.53	.47
Decision (C)	.06	1	.06	.06	.12	1	.12	.10
Class Level (D)	3.65	3	1.22	1.09	23.19	3	7.73	6.84*
AxB	.44	1	.44	.39	.88	1	.88	.78
AxC	4.77	1	4.77	4.27*	3.88	1	3.88	3.43
AxD	2.15	3	.72	.64	3.49	3	1.16	1.03
BxC	.45	1	.45	.40	.02	1	.02	.01
BxD	5.00	3	1.67	1.49	3.13	3	1.04	.92
CxD	1.53	3	.51	.46	.50	3	.17	.15
AxBxC	.04	1	.04	.03	.25	1	.25	.22
AxBxD	.16	3	.05	.05	3.89	3	1.30	1.15
AxCxD	.99	3	.33	.30	1.39	3	.46	.41
BxCxD	.89	3	.30	.26	1.43	3	.48	.42
AxBxCxD	3.91	3	1.30	1.17	2.28	3	.76	.67
Explained	31.05	31	1.00	.90	54.38	31	1.75	1.55
Residual	549.49	492	1.12		556.06	492	1.13	
Total	580.54	523	1.11		610.44	523	1.17	

* $p < .05$

Table 12 (continued)

Source	25. Department chairman				26. Student personnel dean			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	1.04	1	1.04	.79	.61	1	.61	.78
Major (B)	.10	1	.10	.07	2.14	1	2.14	2.74
Decision (C)	1.28	1	1.28	.97	2.45	1	2.45	3.14
Class Level (D)	19.30	3	6.43	4.90*	13.87	3	4.63	5.92*
AxB	.00	1	.00	.00	1.65	1	1.65	2.11
AxC	4.49	1	4.49	3.43	.56	1	.56	.72
AxD	6.25	3	2.08	1.59	2.52	3	.84	1.08
BxC	.92	1	.92	.70	.09	1	.09	.12
BxD	7.38	3	2.46	1.88	2.48	3	.83	1.06
CxD	.41	3	.14	.10	4.84	3	1.61	2.07
AxBxC	.12	1	.12	.09	.33	1	.33	.42
AxBxD	6.16	3	2.05	1.57	2.27	3	.76	.97
AxCxD	.31	3	.10	.08	1.20	3	.40	.51
BxCxD	.79	3	.26	.20	2.45	3	.82	1.04
AxBxCxD	1.33	3	.44	.34	.66	3	.22	.28
Explained	55.08	31	1.78	1.35	45.82	31	1.48	1.89
Residual	645.68	492	1.31		374.17	479	.78	
Total	700.75	523	1.34		419.99	510	.82	

* $p < .05$

Table 12 (continued)

Source	27. Fraternity brothers or sorority sisters				28. Resident assistant			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	5.85	1	5.85	6.91*	.02	1	.02	.03
Major (B)	6.37	1	6.37	7.52*	.01	1	.01	.03
Decision (C)	.01	1	.01	.01	.51	1	.51	1.11
AxB	.55	1	.55	.65	.61	1	.61	1.32
AxC	.04	1	.04	.05	.81	1	.81	1.77
AxD	1.91	3	.64	.75	2.05	3	.68	1.49
BxC	1.22	1	1.22	1.44	.02	1	.02	.04
BxD	.02	3	.01	.01	2.18	3	.73	1.59
CxD	4.85	3	1.62	1.91	1.13	3	.38	.83
AxBxC	.41	1	.41	.49	.27	1	.27	.59
AxBxD	1.59	3	.53	.63	1.05	3	.35	.76
AxCxD	1.92	3	.64	.76	.92	3	.31	.67
BxCxD	2.79	3	.93	1.10	1.36	3	.45	.99
AxBxCxD	.25	3	.08	.10	.57	3	.19	.42
Explained	46.83	31	1.51	1.79	18.63	31	.61	1.31
Residual	405.35	479	.85		219.14	479	.46	
Total	452.18	510	.89		237.77	510	.47	

* $p < .05$

Table 12 (continued)

Source	29. Roommate				30. Personal friends			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	1.20	1	1.20	1.35	.04	1	.04	.03
Major (B)	3.08	1	3.08	3.46	5.72	1	5.72	4.52*
Decision (C)	2.77	1	2.77	3.11	1.21	1	1.21	.95
Class Level (D)	1.70	3	.57	.64	.18	3	.06	.05
AxB	.12	1	.12	.13	.15	1	.15	.12
AxC	.31	1	.31	.35	6.38	1	6.38	5.04*
AxD	1.96	3	.65	.73	5.99	3	2.00	1.58
BxC	.00	1	.00	.00	.52	1	.52	.41
BxD	2.96	3	.99	1.11	1.83	3	.61	.48
CxD	4.07	3	1.36	1.52	9.12	3	3.04	2.40
AxBxC	1.60	1	1.60	1.79	1.46	1	1.46	1.15
AxBxD	6.00	3	2.00	2.24	.39	3	.13	.10
AxCxD	.67	3	.22	.25	1.09	3	.36	.29
BxCxD	.09	3	.03	.03	.62	3	.21	.16
AxBxCxD	1.02	3	.34	.38	.76	3	.25	.20
Explained	31.87	31	1.03	1.15	49.19	31	1.59	1.25
Residual	427.24	479	.89		606.76	479	1.27	
Total	459.11	510	.90		655.95	510	1.29	

* $p < .05$

Table 12 (continued)

Source	31. Person working in your chosen occupation				32. State employment agent			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	.02	1	.02	.02	1.77	1	1.77	1.69
Major (B)	.09	1	.09	.09	1.84	1	1.84	1.75
Decision (C)	.03	1	.03	.03	6.92	1	6.92	6.58*
Class Level (D)	6.77	3	2.26	2.37	10.01	3	3.34	3.17*
AxB	.00	1	.00	.00	.60	1	.60	.57
AxC	.27	1	.27	.28	1.71	1	1.71	1.62
AxD	1.85	3	.62	.65	.42	3	.14	.13
BxC	.19	1	.19	.20	4.57	1	4.57	4.35*
BxD	7.57	3	2.52	2.65*	.89	3	.30	.28
CxD	.51	3	.17	.18	1.37	3	.46	.43
AxBxC	.07	1	.07	.08	.22	1	.22	.21
AxBxD	2.39	3	.80	.84	2.27	3	.76	.72
AxCxD	2.87	3	.96	1.00	.63	3	.21	.20
BxCxD	2.94	3	.98	1.03	.01	3	.00	.00
AxBxCxD	1.29	3	.43	.45	2.59	3	.86	.82
Explained	25.59	31	.83	.87	48.87	31	1.58	1.50
Residual	466.15	489	.95		513.90	489	1.05	
Total	491.74	520	.95		562.77	520	1.08	

* $p < .05$

Table 12 (continued)

Source	33. Choose any occupation				34. Follow intuition			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	.38	1	.38	.29	.07	1	.07	.08
Major (B)	2.62	1	2.62	2.01	.41	1	.41	.50
Decision (C)	18.68	1	18.68	14.30*	1.60	1	1.60	1.92
Class Level (D)	.90	3	.30	.23	.66	3	.22	.26
AxB	3.54	1	3.54	2.71	.00	1	.00	.00
AxC	1.03	1	1.03	.79	2.89	1	2.89	3.47
AxD	2.21	3	.74	.56	.23	3	.08	.09
BxC	.52	1	.52	.40	.01	1	.01	.01
BxD	3.98	3	1.33	1.02	.74	3	.25	.30
CxD	10.14	3	3.38	2.59	1.16	3	.39	.47
AxBxC	3.64	1	3.64	2.79	.43	1	.43	.52
AxBxD	1.99	3	.66	.51	.38	3	.13	.15
AxCxD	.67	3	.23	.17	.40	3	.13	.16
BxCxD	5.16	3	1.72	1.32	4.31	3	1.44	1.73
AxBxCxD	1.65	3	.55	.42	.48	3	.16	.19
Explained	58.32	31	1.88	1.44	14.43	31	.47	.56
Residual	638.77	489	1.31		406.78	489	.83	
Total	697.09	520	1.34		421.21	520	.81	

* $p < .05$

Table 12 (continued)

Source	35. Postpone				36. See a counselor in the Counseling Center			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	2.76	1	2.76	2.32	.79	1	.79	.63
Major (B)	.03	1	.03	.02	.47	1	.47	.38
Decision (C)	8.51	1	8.51	7.15*	6.46	1	6.46	5.19*
Class Level (D)	6.14	3	2.05	1.72	19.07	3	6.36	5.10*
AxB	2.26	1	2.26	1.90	.41	1	.41	.33
AxC	8.62	1	8.62	7.24*	.24	1	.24	.19
AxD	3.34	3	1.11	.94	1.63	3	.55	.44
BxC	.58	1	.58	.49	.34	1	.34	.28
BxD	9.24	3	3.08	2.59	3.29	3	1.10	.88
CxD	9.10	3	3.03	2.55	3.32	3	1.11	.89
AxBxC	6.55	1	6.55	5.51*	.54	1	.54	.43
AxBxD	3.55	3	1.18	1.00	2.06	3	.69	.55
AxCxD	2.51	3	.84	.70	3.21	3	1.07	.86
BxCxD	2.09	3	.70	.59	.97	3	.32	.26
AxBxCxD	2.66	3	.89	.75	6.98	3	2.33	1.87
Explained	65.99	31	2.13	1.79	58.95	31	1.90	1.53
Residual	581.92	489	1.19		612.91	492	1.25	
Total	647.91	520	1.25		672.86	523	1.29	

* $p < .05$

Table 12 (continued)

Source	37. See a counselor in the Placement Center				38. Talk to friends			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	4.16	1	4.16	2.51	4.24	1	4.24	3.35
Major (B)	2.00	1	2.00	1.20	.31	1	.31	.25
Decision (C)	8.45	1	8.45	5.09*	.09	1	.09	.07
Class Level (D)	16.07	3	5.36	3.23*	3.40	3	1.13	.89
AxB	1.23	1	1.23	.74	.79	1	.79	.63
AxC	.22	1	.22	.13	2.22	1	2.22	1.75
AxD	7.14	3	2.38	1.43	1.06	3	.36	.28
BxC	3.81	1	3.81	2.30	2.73	1	2.73	2.16
BxD	8.30	3	2.77	1.67	7.81	3	2.60	2.06
CxD	2.59	3	.86	.52	6.08	3	2.03	1.60
AxBxC	.17	1	.17	.10	1.40	1	1.40	1.11
AxBxD	4.60	3	1.53	.92	.55	3	.18	.15
AxCxD	8.32	3	2.77	1.67	2.01	3	.67	.53
BxCxD	5.75	3	1.92	1.16	2.39	3	.80	.63
AxBxCxD	4.94	3	1.65	.99	3.61	3	1.20	.95
Explained	83.70	31	2.70	1.63	42.37	31	1.37	1.08
Residual	816.41	492	1.66		622.50	492	1.27	
Total	900.11	523	1.72		664.87	523	1.27	

* $p < .05$

Table 12 (continued)

Source	39. Talk to parents				40. Talk to class instructors			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	.04	1	.04	.03	.71	1	.71	.50
Major (B)	3.05	1	3.05	2.11	4.14	1	4.14	2.94
Decision (C)	1.90	1	1.90	1.31	.86	1	.86	.61
Class Level (D)	8.05	3	2.69	1.85	2.25	3	.75	.53
AxB	.86	1	.86	.59	2.58	1	2.58	1.83
AxC	.01	1	.01	.01	1.32	1	1.32	.94
AxD	2.24	3	.75	.52	.28	3	.09	.07
BxC	.01	1	.01	.01	.22	1	.22	.15
BxD	3.55	3	1.18	.82	1.37	3	.46	.32
CxD	7.03	3	2.35	1.62	.91	3	.30	.22
AxBxC	.40	1	.40	.28	.32	1	.32	.22
AxBxD	4.65	3	1.55	1.07	.50	3	.17	.12
AxCxD	.49	3	.16	.11	.62	3	.21	.15
BxCxD	11.64	3	3.88	2.68*	8.74	3	2.91	2.07
AxBxCxD	2.60	3	.87	.60	.39	3	.13	.09
Explained	65.97	31	2.13	1.47	36.01	31	1.16	.83
Residual	713.04	492	1.45		693.03	492	1.41	
Total	779.02	523	1.49		729.04	523	1.39	

* $p < .05$

Table 12 (continued)

Source	41. Talk to person working in the occupation you are interested in				42. Check resources concerning future job openings			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	.24	1	.24	.38	3.30	1	3.30	2.95
Major (B)	2.40	1	2.40	3.83	.88	1	.88	.79
Decision (C)	.94	1	.94	1.51	.01	1	.01	.01
Class Level (D)	.76	3	.25	.40	12.97	3	4.32	3.87*
AxB	.15	1	.15	.24	1.03	1	1.03	.92
AxC	1.16	1	1.16	1.86	.25	1	.25	.22
AxD	2.83	3	.94	1.51	3.03	3	1.01	.91
BxC	1.46	1	1.46	2.33	1.52	1	1.52	1.36
BxD	1.47	3	.49	.78	.49	3	.16	.15
CxD	2.47	3	.82	1.32	4.98	3	1.66	1.49
AxBxC	1.26	1	1.26	2.01	2.69	1	2.69	2.41
AxBxD	1.64	3	.55	.87	2.12	3	.71	.63
AxCxD	2.41	3	.80	1.28	4.41	3	1.47	1.32
BxCxD	4.55	3	1.52	2.42	6.73	3	2.24	2.01
AxBxCxD	.67	3	.22	.35	2.97	3	.99	.89
Explained	24.86	31	.80	1.28	42.58	31	1.37	1.23
Residual	309.30	494	.63		551.70	494	1.12	
Total	334.16	525	.64		594.28	525	1.13	

* $p < .05$

Table 12 (continued)

Source	43. Read literature about career decisions				44. Get information about the occupation you are interested in			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	.40	1	.50	.32	.26	1	.26	.39
Major (B)	1.53	1	1.53	.98	1.88	1	1.88	2.78
Decision (C)	3.50	1	3.50	2.23	.30	1	.30	.44
Class Level (D)	8.18	3	2.73	1.74	2.70	3	.90	1.33
AxB	.06	1	.06	.04	1.56	1	1.56	2.31
AxC	2.67	1	2.67	1.71	.00	1	.00	.00
AxD	3.80	3	1.27	.81	.79	3	.26	.39
BxC	4.44	1	4.44	2.84	.01	1	.01	.02
BxD	.79	3	.26	.17	1.68	3	.56	.83
CxD	3.68	3	1.23	.78	1.97	3	.66	.97
AxBxC	1.24	1	1.24	.79	1.63	1	1.63	2.41
AxBxD	1.51	3	.50	.32	2.58	3	.86	1.27
AxCxD	.90	3	.30	.19	1.15	3	.38	.57
BxCxD	3.13	3	1.04	.67	8.60	3	2.87	4.24*
AxBxCxD	2.67	3	.89	.57	1.79	3	.60	.88
Explained	39.93	31	1.29	.82	23.99	31	.77	1.14
Residual	774.38	494	1.57		334.39	494	.68	
Total	814.31	525	1.55		358.38	525	.68	

* $p < .05$

Table 12 (continued)

45. Visit work sites					46. Self-assess your own strengths and limitations			
Source	SS	df	MS	F	SS	df	MS	F
Sex (A)	1.20	1	1.20	1.06	3.81	1	3.81	4.66*
Major (B)	7.14	1	7.14	6.27*	1.07	1	1.07	1.31
Decision (C)	1.85	1	1.85	1.63	1.22	1	1.22	1.50
Class Level (D)	.14	3	.05	.04	2.47	3	.82	1.01
AxB	2.21	1	2.21	1.95	.21	1	.21	.25
AxC	.00	1	.00	.00	3.07	1	3.07	3.75
AxD	7.44	3	2.48	2.18	1.45	3	.48	.59
BxC	.63	1	.63	.55	.70	1	.70	.85
BxD	7.61	3	2.54	2.23	2.56	3	.86	1.04
CxD	.95	3	.32	.28	1.56	3	.52	.64
AxBxC	1.18	1	1.18	1.04	.41	1	.41	.50
AxBxD	2.56	3	.85	.75	1.55	3	.52	.63
AxCxD	.36	3	.12	.10	1.06	3	.35	.43
BxCxD	7.49	3	2.50	2.19	5.24	3	1.75	2.13
AxBxCxD	9.02	3	3.01	2.64*	.99	3	.33	.40
Explained	68.60	31	2.21	1.95	25.18	31	.81	.99
Residual	562.00	494	1.14		404.60	494	.82	
Total	630.61	525	1.20		429.78	525	.82	

* $p < .05$

Table 12 (continued)

Source	47. Take some tests				48. Review materials in CRC			
	SS	df	MS	F	SS	df	MS	F
Sex (A)	6.25	1	6.25	3.83	8.62	1	8.62	6.20*
Major (B)	1.72	1	1.72	1.06	.00	1	.00	.00
Decision (C)	2.08	1	2.08	1.27	6.57	1	6.56	4.72*
Class Level (D)	14.14	3	4.71	2.89*	1.24	3	.42	.30
AxB	.06	1	.06	.04	.07	1	.07	.05
AxC	11.10	1	11.10	6.81*	3.71	1	3.71	2.67
AxD	9.07	3	3.02	1.85	5.18	3	1.73	1.24
BxC	1.82	1	1.82	1.12	2.33	1	2.33	1.68
BxD	.65	3	.22	.13	3.62	3	1.21	.87
CxD	1.15	3	.38	.24	.23	3	.08	.06
AxBxC	.27	1	.27	.17	1.41	1	1.41	1.02
AxBxD	.47	3	.16	.10	1.78	3	.59	.43
AxCxD	2.68	3	.89	.55	.05	3	.02	.01
BxCxD	6.33	3	2.11	1.29	5.02	3	1.68	1.20
AxBxCxD	1.72	3	.57	.35	5.19	3	1.73	1.24
Explained	58.77	31	1.90	1.16	46.52	31	1.50	1.08
Residual	805.75	494	1.63		689.99	494	1.39	
Total	864.53	525	1.65		733.51	525	1.40	

* $p < .05$

Table 13

Adult Vocational Maturity Means and Standard Deviations Broken-down
by Class Level, Sex, Major, and Firmness of Occupational Goal

Item Class Level		Sex		Major		Firmness of Occupational Goal		Total
		Male	Female	Science	Nonscience	Decided	Undecided	
Freshmen	\bar{X}	99.69	96.35	97.68	98.50	97.54	99.02	98.09
	SD	11.55	11.87	11.83	11.80	11.63	12.09	11.78
Sophomores	\bar{X}	99.75	91.68	96.42	96.03	94.98	97.27	96.16
	SD	13.01	12.21	13.45	13.21	12.96	13.50	13.22
Juniors	\bar{X}	98.92	93.72	96.67	97.59	95.27	102.10	97.20
	SD	13.91	14.63	16.05	12.94	13.49	15.34	14.31
Seniors	\bar{X}	97.16	93.88	96.86	95.06	94.15	102.39	96.10
	SD	13.46	11.40	13.27	12.38	12.01	13.78	12.89
All Levels	\bar{X}	98.62	94.10	96.96	96.80	95.35	99.95	96.88
	SD	13.15	12.54	13.62	12.62	12.51	13.71	13.09

Note: Lower scores indicate higher levels of career maturity.

Table 14

Analysis of Variance of the Adult Vocational Maturity Inventory

Source	SS	df	MS	F
Sex (A)	2393.02	1	2393.02	14.82*
Major (B)	.01	1	.01	.00
Decision (C)	1801.86	1	1801.86	11.16*
Class Level (D)	406.26	3	135.42	.84
AxB	31.33	1	31.33	.19
AxC	299.96	1	299.96	1.86
AxD	642.10	3	214.04	1.33
BxC	154.35	1	154.35	.96
BxD	1418.82	3	472.94	2.93*
CxD	1363.60	3	454.53	2.82*
AxBxC	21.10	1	21.10	.13
AxBxD	382.39	3	127.46	.79
AxCxD	579.01	3	193.00	1.20
BxCxD	1419.84	3	473.28	2.93*
AxBxCxD	317.64	3	105.88	.66
Explained	10342.56	31	333.63	2.01
Residual	79767.56	494	161.47	
Total	90110.13	525	171.64	

* $p < .05$

Table 15

Pearson Product-Moment Correlations Between Career Decision-Making Inventory Items and Adult Vocational Maturity Inventory Scores by Class Level, Sex, Major, and Firmness of Occupational Goal

Item	Sex		Major		Firmness of Occupational Goal		
	Class Level	Male	Female	Science	Nonscience	Decided	Undecided Total
1. Salary							
Freshmen		.04	.19	.19	.06	.16	.11 .13
Sophomores		.15	.20	.20	.20	.28	.11 .20*
Juniors		.46*	.20	.39*	.38*	.36*	.39* .38*
Seniors		.18	.23	.33*	-.00	.34*	-.03 .20*
All Levels		.25*	.21*	.30*	.20*	.31*	.13 .25*
2. Prestige of the occupation							
Freshmen		.05	.12	.11	.07	.13	.04 .10
Sophomores		-.03	.06	.30	-.09	.18	-.07 .04
Juniors		.29*	.42*	.33*	.30*	.30*	.39* .32*
Seniors		.22*	.25	.34*	.06	.24*	.32 .23*
All Levels		.17*	.23*	.29*	.10	.23*	.15* .20*
3. Job security							
Freshmen		-.05	-.15	-.07	-.13	-.11	-.07 -.10
Sophomores		.18	.10	.09	.09	.17	.04 .09
Juniors		.22*	-.04	.24	.02	.12	.10 .11
Seniors		.25*	-.12	.21*	.04	.23*	.05 .15
All Levels		.17*	-.05	.14*	.02	.11*	.02 .08
4. Potential for advancement							
Freshmen		-.17	-.02	-.06	-.14	-.11	-.04 -.09
Sophomores		-.09	-.13	.07	-.11	.06	-.15 -.05
Juniors		.32*	.04	.30*	.16	.24*	.11 .22*
Seniors		.18	-.17	.14	.04	.14	-.10 .10
All Levels		.13*	-.04	.13*	.01	.12*	-.04 .07

*p < .05

Table 15 (continued)

Item	Sex		Major		Firmness of Occupational Goal			
	Class Level	Male	Female	Science	Nonscience	Decided	Undecided	Total
5. Interest in the field								
Freshmen		-.09	-.21	-.22	-.06	-.10	-.22	-.15
Sophomores		-.27*	-.17	-.36*	-.20	-.29*	-.20	-.24*
Juniors		-.05	-.21	-.14	-.09	-.17	.05	-.11
Seniors		-.14	-.40*	-.27*	-.17	-.23*	-.18	-.21*
All Levels		-.11*	-.24*	-.22*	-.12*	-.18*	-.15*	-.17*
6. Working environment								
Freshmen		-.13	-.05	-.16	-.04	-.09	-.14	-.11
Sophomores		.02	-.02	-.24	.08	.14	-.15	-.01
Juniors		-.04	-.36*	-.21	-.07	-.08	-.21	-.13
Seniors		.03	-.13	-.05	-.01	-.03	.09	-.02
All Levels		-.02	-.13	-.15*	-.00	-.04	-.12	-.07
7. Variety of work duties								
Freshmen		.09	-.29*	-.15	-.09	-.05	-.20	-.12
Sophomores		-.05	.11	.13	-.12	-.13	.02	-.05
Juniors		-.02	-.20	-.01	-.16	-.09	-.04	-.10
Seniors		-.14	-.16	-.16	-.20	-.13	-.13	-.16*
All Levels		-.05	-.16*	-.08	-.14*	-.10	-.09	-.11*
8. Independence in duties								
Freshmen		-.17	-.24	-.28*	-.17	-.11	-.39*	-.22*
Sophomores		-.26	-.17	-.21	-.20	-.09	-.26	-.20*
Juniors		-.16	-.08	-.21	-.08	-.14	-.12	-.14
Seniors		-.23*	-.15	-.27*	-.16	-.24*	-.14	-.21*
9. Helping others (altruism)								
Freshmen		-.00	-.21	-.25*	-.02	-.19	-.03	-.14
Sophomores		-.16	-.19	-.35*	-.16	-.15	-.25	-.21*
Juniors		-.11	.00	.01	-.17	-.02	-.06	-.08
Seniors		-.14	-.25	-.25*	-.06	-.17	-.05	-.15
All Levels		-.11*	-.15*	-.18*	-.10	-.12*	-.11	-.14*

*p < .05

Table 15 (continued)

Item	Class Level	Sex		Major		Firmness of Occupational Goal		
		Male	Female	Science	Nonscience	Decided	Undecided	Total
10. Leadership								
	Freshmen	-.00	-.06	-.07	-.04	-.08	.04	-.05
	Sophomores	-.23	-.07	.06	-.21	.03	-.24	-.12
	Juniors	.18	.10	.21	.10	.10	.40*	.16
	Seniors	-.07	-.38*	-.21*	-.05	-.16	-.02	-.16*
	All Levels	-.01	-.08	-.03	-.04	-.03	.02	-.04
11. Opportunity to use your special talents								
	Freshmen	-.13	-.30*	-.32*	-.13	-.16	-.31*	-.23*
	Sophomores	-.07	-.09	-.19	.06	.07	-.09	-.01
	Juniors	.04	-.17	.06	-.04	-.02	-.02	-.05
	Seniors	-.31*	-.36*	-.40*	-.22	-.30*	-.33*	-.33*
	All Levels	-.13*	-.22*	-.25*	-.08	-.13*	-.20*	-.16*
12. Leisure								
	Freshmen	.14	.05	.08	.13	.23*	-.10	.11
	Sophomores	.05	.18	.09	.19	.24	.06	.16
	Juniors	.31*	.37*	.35*	.30*	.30*	.39*	.32*
	Seniors	.02	-.02	-.06	-.19	.01	-.01	-.00
	All Levels	.14*	.16*	.16*	.15*	.18*	.07	.15*
13. Challenge of work tasks								
	Freshmen	-.18	-.28*	-.38*	-.13	-.14	-.38*	-.25*
	Sophomores	-.26	-.26	.07	-.36*	-.41*	-.04	-.22*
	Juniors	-.04	-.16	-.18	-.05	-.13	.06	-.10
	Seniors	-.32*	-.45*	-.43*	-.28*	-.34*	-.38*	-.36*
	All Levels	-.20*	-.25*	-.28*	-.20*	-.24*	-.19*	-.23*
14. Self-satisfaction								
	Freshmen	-.00	-.24	-.20	-.03	-.05	-.25	-.13
	Sophomores	-.18	-.21	-.26	-.15	-.23	-.17	-.18
	Juniors	-.03	.22	-.07	.06	-.04	.12	-.00
	Seniors	-.14	-.28*	-.27*	-.12	-.14	-.17	-.18*
	All Levels	-.09	-.12	-.19*	-.05	-.11*	-.14	-.12*

*p < .05

Table 15 (continued)

Item	Sex		Major		Firmness of Occupational Goal			
	Class Level	Male	Female	Science	Nonscience	Decided	Undecided	Total
15. Fringe benefits								
Freshmen		-.03	.09	.12	-.05	-.06	.02	.04
Sophomores		.44*	.29	.45*	.40*	.58*	.25	.41*
Juniors		.28*	.21	.28*	.25*	.23*	.41*	.26*
Seniors		.28*	-.24	.20	.08	.16	.17	.15
All Levels		.26*	.11	.23*	.19*	.23*	.19*	.21*
16. Opportunity to use creative ideas								
Freshmen		-.06	.00	-.24	.19	.12	-.22	-.03
Sophomores		-.16	-.11	-.19	-.02	-.08	-.12	-.08
Juniors		-.04	-.21	-.11	-.06	-.08	-.07	-.09
Seniors		-.20*	-.32*	-.26*	-.24	-.22*	-.25	-.23*
All Levels		-.11*	-.14*	-.20*	-.03	-.08	-.17*	-.12*
17. Opportunity for intellectual stimulation								
Freshmen		-.09	-2.0	-.39*	.05	-.11	-.22	-.15
Sophomores		-.03	-.11	-.20	.02	.08	-.25	-.04
Juniors		-.00	-.35*	-.19	-.09	-.12	-.19	-.14
Seniors		-.16	-.23	-.26*	-.15	-.20*	-.14	-.19*
All Levels		-.08	-.22*	-.25*	-.05	-.12*	-.21*	-.14*
18. Father								
Freshmen		.26*	.11	.09	.27*	.15	.24	.18*
Sophomores		.24	.21	.56*	.01	.17	.20	.17
Juniors		.04	.03	.14	-.06	.13	-.23	.03
Seniors		.03	-.21	.09	-.06	.14	-.11	.07
All Levels		.11*	.14*	.16*	.06	.15*	.04	.11*
19. Mother								
Freshmen		.18	.26*	.17	.19	.06	.44*	.18*
Sophomores		.19	.11	.47*	-.10	.10	.13	.09
Juniors		.05	.16	.05	.11	.13	-.10	.08
Seniors		.07	.11	.08	.04	.10	-.05	.06
All Levels		.11	.18*	.14*	.06	.11*	.11	.10*

*p < .05

Table 15 (continued)

Item	Sex		Major		Firmness of Occupational Goal		
	Class Level	Male	Female	Science	Nonscience	Decided	Undecided Total
20. Counselor in the Counseling Center							
Freshmen		.21	-.17	.11	-.11	-.00	.01 .00
Sophomores		.21	.14	.34	.10	.19	.13 .16
Juniors		.12	.01	.00	.15	-.03	.28 .08
Seniors		.16	.23	.31*	-.02	.15	.11 .17*
All Levels		.18*	.04	.17*	.06	.08	.10 .11*
21. Counselor in the Placement Center							
Freshmen		.20	-.11	.12	-.06	.03	.02 .04
Sophomores		.27*	.21	.30	.15	.25	.15 .20*
Juniors		.12	-.12	-.02	.09	-.08	.26 .04
Seniors		.09	-.10	.15	-.20	-.00	-.05 .01
All Levels		.17*	-.04	.12	.02	.03	.07 .07
22. Class instructor							
Freshmen		.30*	.10	.20	.22	.21	.20 .21*
Sophomores		.36*	.06	.30	.10	.05	.29* .17
Juniors		-.04	-.20	-.12	-.09	-.11	-.06 -.09
Seniors		.07	-.09	-.06	.13	.06	-.05 .01
All Levels		.11*	-.05	.02	.07	.02	.13 .05
23. Academic advisor							
Freshmen		.26*	-.27*	-.08	.05	.01	-.09 -.02
Sophomores		.27*	-.04	.34	.01	.07	.19 .13
Juniors		.11	-.23	.19	-.24*	.07	-.12 -.01
Seniors		-.09	.23	.00	-.06	.01	-.03 -.00
All Levels		.0	-.08	.09	-.05	.04	.00 .02
24. Department coordinator							
Freshmen		.13	-.10	.07	-.13	-.08	.07 -.02
Sophomores		.38*	.17	.15	.27*	.16	.30* .23*
Juniors		.05	-.33*	-.06	-.09	-.01	-.23 -.07
Seniors		.10	.14	.10	.08	.13	-.02 .10
All Levels		.14*	-.04	.06	.05	.06	.03 .05

*p < .05

Table 15 (continued)

Item	Sex		Major		Firmness of Occupational Goal		
	Class Level	Male	Female	Science	Nonscience	Decided	Undecided Total
25. Department chairman							
Freshmen		.11	-.02	.12	-.07	-.01	.08 .02
Sophomores		.35*	.14	.15	.25*	.20	.23 .22*
Juniors		.12	-.27	.10	-.04	.02	.05 .04
Seniors		.11	.20	.13	.10	.15	.06 .13
All Levels		.16*	.02	.12*	.07	.10	.09 .10*
26. Student personnel dean							
Freshmen		.18	.13	.33*	.02	.09	.28 .17
Sophomores		.26	.22	.48*	.14	.22	.26 .24*
Juniors		.11	.06	.09	.09	-.07	.36* .09
Seniors		.10	.11	.15	.01	.05	.02 .09
All Levels		.16*	.13	.21*	.09	.06	.23* .14*
27. Fraternity brothers or sorority sisters							
Freshmen		.16	.17	.29*	.08	.06	.33* .17
Sophomores		.04	.25	.27	.14	.18	.21 .17
Juniors		.00	-.06	-.02	-.00	.01	-.07 -.00
Seniors		.10	.24	.12	.22	.21*	-.10 .14
All Levels		.08	.15*	.15*	.11	.12*	.10 .12*
28. Resident assistant							
Freshmen		.05	-.04	-.06	.02	-.10	.15 -.02
Sophomores		.15	.14	.35*	.03	.04	.31* .15
Juniors		.0	-.10	.04	.01	.05	.00 .02
Seniors		-.02	.25	-.07	.27*	.00	.12 .05
All Levels		.07	.04	.02	.07	.01	.14 .05
29. Roommate							
Freshmen		.17	.04	-.02	.16	-.08	.37* .07
Sophomores		.06	-.04	.39*	-.17	-.06	.02 -.01
Juniors		.11	.16	.14	.12	.15	.04 .13
Seniors		.18	.24	.15	.26*	.13	.19 .19*
All Levels		.13*	.10	.14*	.07	.06	.14 .10*

*p < .05

Table 15 (continued)

Item	Sex		Major		Firmness of Occupational Goal			
	Class Level	Male	Female	Science	Nonscience	Decided	Undecided	Total
30. Personal friends								
Freshmen		.05	-.04	-.14	.13	-.14	.29*	-.01
Sophomores		.15	-.02	.37*	.01	.12	.14	.12
Juniors		.11	.34*	.14	.26*	.29*	-.08	.20*
Seniors		.15	.30*	.28*	.13	.16	.18	.20*
All Levels		.11*	.16*	.15*	.13*	.13*	.14	.14*
31. Person working in your chosen occupation								
Freshmen		.06	.28*	.13	.22	.26*	-.00	.17
Sophomores		.03	-.00	-.13	.07	.06	-.02	.02
Juniors		.02	.06	-.15	.14	-.03	.07	-.00
Seniors		.00	-.09	-.06	.11	.01	-.17	-.02
All Levels		.02	.08	-.05	.13*	.06	-.04	.04
32. State employment agent								
Freshmen		.17	.01	.26*	-.13	-.01	.20	.07
Sophomores		-.03	-.07	.06	.00	-.06	.09	.02
Juniors		.19	.16	.10	.22	.06	.31	.17*
Seniors		.20*	.21	.18	.25*	.18	.17	.20*
All Levels		.17*	.11	.16*	.10	.07	.18*	.13*
33. Choose any occupation								
Freshmen		.02	.14	.19	-.13	-.01	.14	.05
Sophomores		.29*	.24	.17	.26*	.13	.29*	.23*
Juniors		.31*	.40*	.28*	.41*	.25*	.45*	.35*
Seniors		.22*	.17	.21*	.17	.15	.16	.20*
All Levels		.32*	.23*	.22*	.22*	.16*	.26*	.22*
34. Follow intuition								
Freshmen		-.07	-.14	-.17	-.07	-.16	-.01	-.11
Sophomores		.01	-.08	-.11	.04	-.08	.07	-.01
Juniors		.02	.08	-.05	.09	.01	.14	.02
Seniors		.09	-.03	-.07	.24	.04	.18	.06
All Levels		.03	-.05	-.09	.08	-.03	.09	-.00

*p < .05

Table 15 (continued)

Item	Sex		Major		Firmness of Occupational Goal		
	Class Level	Male	Female	Science	Nonscience	Decided	Undecided Total
35. Postpone							
	Freshmen	.18	.13	.21	-.07	.01	.40* .15
	Sophomores	.11	.24	.25	.17	.24	.12 .20
	Juniors	.37*	.12	.41*	.17	.26*	.33* .29*
	Seniors	.22*	.36*	.19	.33*	.18*	.17 .25*
	All Levels	.24*	.20*	.26*	.19*	.19*	.24* .23*
36. See a counselor in the Counseling Center							
	Freshmen	.04	.04	.12	-.05	.01	.08 .04
	Sophomores	.26	.31*	.16	.27*	.16	.27 .23*
	Juniors	.10	-.05	.04	.05	-.03	.19 .05
	Seniors	.06	.26	.16	.06	.07	.12 .12
	All Levels	.11*	.12	.12	.10	.06	.13 .11*
37. See a counselor in the Placement Center							
	Freshmen	.15	.27*	.26*	.15	.15	.29 .21*
	Sophomores	.08	.01	-.03	.01	.07	-.08 -.00
	Juniors	.16	-.13	.06	.03	-.08	.28 .05
	Seniors	.13	.15	.23*	-.01	.11	.08 .13
	All Levels	.14*	.09	.16*	.05	.07	.11 .10*
38. Talk to friends							
	Freshmen	.11	.17	.10	.13	.06	.26 .12
	Sophomores	.11	.29	.20	.17	.11	.23 .18
	Juniors	.07	.15	-.05	.21	.12	-.10 .08
	Seniors	.04	.21	.18	-.08	.14	-.15 .08
	All Levels	.07	.20*	.09	.12*	.12*	.07 .11*
39. Talk to parents							
	Freshmen	.07	.29*	.27*	.08	.12	.32* .19*
	Sophomores	.19	.29	.21	.19	.27	.17 .20
	Juniors	.13	.11	.15	.12	.17	-.02 .13
	Seniors	.07	.20	.14	.08	.11	.08 .11
	All Levels	.12*	.22*	.18*	.13*	.17*	.13 .15*

*p < .05

Table 15 (continued)

Item	Sex		Major		Firmness of Occupational Goal			
	Class Level	Male	Female	Science	Nonscience	Decided	Undecided	Total
40. Talk to class instructors								
Freshmen		.18	.17	.18	.17	.24*	.07	.17
Sophomores		.14	.05	.33	-.16	-.01	.07	.03
Juniors		.12	-.07	.11	.01	.18	-.28	.05
Seniors		.06	.06	-.01	.16	.12	.02	.06
All Levels		.10	.04	.11	.04	.14*	-.01	.08
41. Talk to person working in the occupation you are interested in								
Freshmen		-.08	.27*	.07	.17	.22	.01	.12
Sophomores		.18	-.21	.09	-.03	.04	-.01	.00
Juniors		-.14	-.11	-.06	-.24*	-.16	-.03	-.12
Seniors		-.06	.01	-.23*	.09	-.06	.07	-.05
All Levels		-.04	.02	-.05	.01	-.01	.01	-.02
42. Check resources concerning future job openings								
Freshmen		-.08	.06	.09	.05	.10	-.01	.07
Sophomores		-.03	-.08	.04	-.17	-.01	-.12	-.08
Juniors		.30*	-.13	.23	.05	.16	.06	.13
Seniors		.17	-.06	.15	.01	.09	.29	.10
All Levels		.16*	-.05	.14*	.00	.11*	.03	.07
43. Read literature about career decisions								
Freshmen		.19	.09	.06	.19	.06	.23	.12
Sophomores		.05	.17	.15	.08	.16	.02	.10
Juniors		.30*	-.03	.33*	.03	.21*	.11	.19*
Seniors		.20*	.13	.30*	.03	.17	.41*	.19*
All Levels		.20*	.10	.24*	.08	.16*	.14	.16*
44. Get information about the occupation you are interested in								
Freshmen		-.10	.01	-.22	.09	-.02	-.09	-.05
Sophomores		-.20	-.11	-.19	-.14	-.02	-.29*	-.15
Juniors		.04	.01	.09	-.02	.05	-.04	.03
Seniors		-.03	-.30*	-.15	-.09	-.05	-.16	-.11
All Levels		-.04	-.08	-.09	-.03	-.00	-.16*	-.06

*p < .05

Table 15 (continued)

Item	Sex		Major		Firmness of Occupational Goal			
	Class Level	Male	Female	Science	Nonscience	Decided	Undecided	Total
45. Visit work sites								
Freshmen	.01	-.15	-.12	-.04	-.11	-.03	-.08	
Sophomores	-.20	.03	-.09	-.10	.10	-.28*	-.10	
Juniors	-.01	-.15	-.06	-.07	-.05	-.01	-.07	
Seniors	.00	-.12	-.08	-.01	.00	.04	-.02	
All Levels	-.05	-.08	-.08	-.06	-.03	-.10	-.07	
46. Self-assess your own strengths and limitations								
Freshmen	-.25*	.10	-.23	.08	-.16	.02	-.09	
Sophomores	.02	-.07	-.05	-.01	.05	-.11	-.03	
Juniors	-.01	-.12	-.06	-.05	.02	-.12	-.06	
Seniors	-.10	-.13	-.16	-.10	-.16	.10	-.12	
All Levels	-.08	-.05	-.13*	-.03	-.08	-.05	-.08	
47. Take some tests								
Freshmen	.13	.13	-.06	.16	.00	.25	.10	
Sophomores	-.07	-.13	-.09	-.06	.10	-.24	-.07	
Juniors	.07	.20	.08	.13	.16	-.02	.10	
Seniors	.03	-.02	.03	-.02	.02	-.03	.01	
All Levels	.05	.08	.04	.05	.08	-.05	.04	
48. Review materials in CRC								
Freshmen	.01	.08	.01	.04	-.12	.28	.02	
Sophomores	.02	.08	.17	.00	.18	-.06	.06	
Juniors	.26*	.02	.22	.10	.15	.10	.15	
Seniors	.07	.05	.18	-.16	.04	.00	.04	
All Levels	.11*	.07	.15*	.00	.06	.05	.07	

*p < .05

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BIOGRAPHICAL SKETCH

Jae Chang Lee was born on February 15, 1942, in Seoul, Korea, to Mr. Seung Ryul Lee and Mrs. Ryum Whan Lee. He is the first child of a family of four.

After Mr. Lee graduated from Kyunggi High School in Seoul, Korea, in 1960, he attended Sung Kyun Kwan University and was graduated with Bachelor of Arts and Master of Arts degrees in Public Administration in 1965 and 1967, respectively.

In 1967, upon graduation, Mr. Lee was employed as a planning officer in the Korea Herald in Seoul, Korea, until he departed to the United States for further education.

In 1971, Mr. Lee received the Master of Arts degree in Government from Southern Illinois University at Carbondale, Illinois.

In September 1972, Mr. Lee came to the University of Florida to continue his study in political science. While he was working on his doctorate in political science, Mr. Lee met former Seung Keum Yoon and married on April 20, 1973.

Mr. Lee started his program in Counselor Education in 1974. Christine Meeyong Lee was born on May 6, 1975. Mr. Lee received the Specialist in Education degree in 1975, and the Doctor of Philosophy degree in 1978. He is a member of American Personnel and Guidance Association and National Vocational Guidance Association.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.




Harold C. Riker, Chairman
Professor of Education

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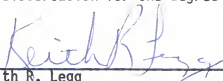
E. L. Tolbert
Associate Professor of Education

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Larry C. Loesch
Assistant Professor of Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



Keith R. Legg
Professor of Political Science

This dissertation was submitted to the Graduate Faculty of the Department of Counselor Education in the College of Education and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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